# DEVELOPMENT OF A JOB DESCRIPTION AND OPERATIONAL GUIDELINES FOR THE ENGLEWOOD COLORADO FIRE DIVISION SAFETY OFFICER

EXECUTIVE ANALYSIS OF FIRE SERVICE OPERATIONS IN EMERGENCY MANAGEMENT

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## ABSTRACT

This research project evaluated fire industry standards and recommendations concerning the role of the Safety Officer in fire organizations and applied this information to describe the role of the Safety Officer for the Englewood Fire Division (EFD). The problem that confronted the EFD was the lack of a formal job description and operational guidelines defining the role, responsibilities and functions of the Safety Officer. The purpose of this research project was to develop a job description and operational guidelines for the EFD Safety Officer.

Evaluative, descriptive and action research methods were employed to (a) assess the need for the safety officer position, (b) determine the qualifications, duties and responsibilities of a fire department Safety Officer in light of industry standards, (c) determine the key functions and responsibilities of an Incident Safety Officer related to specific types of incidents, (d) determine the expectations the EFD has for the Safety Officer assignment, and (e) develop a written job description and operational guidelines for the EFD Safety Officer.

The procedures utilized included a review of current literature defining the need, qualifications, role, responsibilities and functions of the fire service safety officer, an assessment of the expectations the EFD has for the assignment of Safety Officer, and the development of a job description and operational guidelines for the assignment.

The research established the importance of the safety officer assignment and provided the basis for a clear job description and definition of the role for the EFD. The research also evaluated the expectations of the EFD Safety Officer and described how those expectations are currently met. Finally, the research resulted in the development of a job description, operational guidelines and checklists for the EFD Safety Officer.

Two documents were recommended as a result of the research. The first document was a formal job description for the EFD Safety Officer. The second was an SOP describing the response and functions of the Incident Safety Officer (ISO) assignment, including three checklists. It was also recommended that the overall management of the EFD's health and safety program be assigned to one individual. Finally, the development of a written risk management plan was recommended to assist the EFD safety officer in the comprehensive identification and effective management of risks.

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## INTRODUCTION

The City of Englewood Department of Safety Services – Fire Division serves a 6.5 square mile suburban community of approximately 34,000 people in the State of Colorado. The Englewood Fire Division (EFD) is a career fire service organization that provides a broad spectrum of emergency services to the community including fire suppression, Advanced Life Support (ALS) EMS and transport, mitigation of hazardous materials incidents, and technical rescue. The EFD employs 60 full-time members, including administrative staff. The Training Chief (a member of the administrative staff) is responsible for the training, testing and professional development of all Fire Division members and is also designated as the Division Safety Officer. The problem confronting the Fire Division is that no formal job description or operational guidelines defining the role, responsibilities and functions of the Safety Officer have been developed.

The purpose of this research project is to develop a job description and incident operational guidelines for the EFD Safety Officer assignment. Evaluative, descriptive and action research methods will be utilized to answer the following questions:

1. Why does the Englewood Fire Division need a safety officer?
2. What are the general qualifications, duties and responsibilities of a fire service safety officer according to the NFPA and other fire service resources?
3. What are the key functions and responsibilities of a fire service incident safety officer as related to specific types of incidents?
4. What are the expectations of the Englewood Fire Division for the Safety Officer assignment?

5. What should the role and responsibilities of the Englewood Fire Division Safety Officer be?

## BACKGROUND AND SIGNIFICANCE

During the early nineties, the City of Englewood instituted a city-wide risk management plan incorporating peer accident/injury review committees within each city department. The Fire Division assigned the Training Chief to chair the Fire Division's peer review committee and the Fire Division Safety Incident Review Team (SIRT) was established. The SIRT was charged with the task of reviewing all Fire Division related accidents, injuries and equipment damage incidents to determine whether these were preventable or non-preventable and to make recommendations regarding their prevention in the future. As the chairperson for the SIRT, the Training Chief began to be considered as the Fire Division Safety Officer. By virtue of this assignment and designation the Division began to look to the Training Chief to become the incident safety officer on major incidents and he began to fill that part of the incident management system command staff on appropriate incidents. What was lacking, however, was any formal description of the job of the Fire Division Safety Officer in either his/her non-emergent or emergent roles. As a result, outside of the chairperson's role on the SIRT, there has been little consistency in the performance and role of the Fire Division Safety Officer over the years and each successive Training Chief has approached the role a bit differently with varying degrees of success. The lack of any written procedures or guidelines for the safety officer has been particularly problematic on the fire scene. In some cases the safety officer has unnecessarily usurped the authority of company and/or division/group officers without going through the incident commander. In other cases, the safety officer hasn't been dispatched, has

failed to respond when needed, or when he did respond did not have adequate experience, tools or training to provide the necessary oversight of scene safety.

Research at a national level stresses the importance of a well-trained and well-equipped fire service safety officer in order to reduce the potential for firefighter injuries and deaths. Essential to training and equipping the safety officer is to define clearly what his/her responsibilities and functions must be in both the emergent and non-emergent arenas. For the Englewood Fire Division Safety Officer to be selected and function effectively the organization must clearly define what its expectations are of the role in both cases. There remains no excuse for a lack of role definition or guidance for the safety officer position as the NFPA and many fire service organizations have researched and published copious information to assist with this task.

This research addresses the course content of the National Fire Academy's Executive Analysis of Fire Service Operations in Emergency Management in the areas of Emergency Operations, Incident Command System and, to a lesser degree, Capability Assessment. This research also supports the U.S. Fire Administration's operational objectives of reducing the loss of life from fire by 15% by reducing firefighter deaths by 25%, and in addressing fire service risk management easily integrates into the process of involving the local fire service in the creation of a multi-hazard risk reduction plan.

## LITERATURE REVIEW

The goal of the Fire Service Safety Officer is the reduction of firefighter injuries and deaths. Dodson (1999) writes, "…a trained and experienced Incident Safety Officer is the most tangible, cost effective, and prudent way to reduce firefighter injury and death and is one of the fastest solutions we, as a fire service can implement" (p. xi). During the past two decades

firefighters have been killed at a rate of approximately 100 per year and injured at a rate of 8,000 per month (Sachs, 2001; Dodson, 1999; Dunn, 1992; Rubin, 1995). Since NFPA standards 1500 and 1521 were introduced there has been a slight reduction in annual firefighting deaths, yet the number still hovers around the century mark each year. Additionally, it is hard to determine if the reduction is a result of the standards themselves or a result of an annual decrease, nationally, in the number of fires. Dodson (1999) suggests that a more telling statistic is the number of firefighter injuries per one hundred fires fought, which has remained constant over a significant period of time. When it is considered that firefighters in America are killed or injured at a rate of 125 per day, the conclusion that safety remains an issue is glaring.

An additional statistic, for which there is scant data, is the close calls that all firefighters have experienced many times over the course of their careers both in emergent and non-emergent settings. Russell (2002) observes; "…we inevitably hear comments such as 'I knew this was going to happen', or 'Bill was always pushing the envelope'" (p. 24). According to the *safety triangle*, created by Frank Bird, for each fatal accident there are approximately 10 serious incidents, 30 events, and 600 deviations from safe practices. Russell (2002) gives the following illustration:

> As an illustration, envision a classroom with a small tear in the carpet. For every student who enters the room, trips on the tear, falls, hits his or her temple on the corner of the desk and dies – 10 people will have stumbled and fallen, 30 will have stumbled and 600 will have seen the tear in the carpet. If any of those who fell, stumbled or observed the tear had taken action to repair the carpet, the fatal accident would not have occurred. (p.24)

The implications for the fire service and the safety officer role are obvious. We need to pay attention to the close calls as well as the injuries and fatalities if we ever hope to significantly impact the latter. "The point is simple: We do not keep good data on what could have been, and, at times, our memories are too short" (Dodson, 1999, p. 11). Sachs (2001) also stresses the need to document near misses. The development of a "culture of safety" (Russell, 2002, p. 27; Daniels, 2001, p. 32) is needed to effectively reduce injuries and deaths in the fire industry. Fire organizations must be willing to devote resources to the function of safety. Personnel must be able to freely identify and report safety concerns and errors without fear of repercussion if injuries and deaths are to be prevented. The communication of this intent begins at the top of the organization and must flow through to the newest rookie to be successful. The safety officer can play a significant role in helping to foster the culture of safety (Daniels, 2001; Russell, 2002).

Fire service safety officers have been around since the mid 1800s. Early fire service safety officers were employed as *wall watchers*, standing at the corners of a building on fire looking for signs of imminent collapse. The safety officer concept evolved and became formalized through the military during World War II, interestingly, not as a result of safety concerns in battle, but rather in support operations. The recognition of a need to address workplace safety grew steadily thereafter culminating in 1970, when President Nixon signed the William Stieger Act, which included the Occupational Safety and Health Act (OSHA), into law. This legislation levied equal rights and responsibility to employees and employers relative to workplace safety (Dodson, 1999).

Why does a fire department need a safety officer? Stowell, Brakhage and Smith (2001) identify three factors that help answer this question. The first factor is *legal responsibilities*,

these include the laws, codes, adopted standards and regulations that address workplace safety in the jurisdiction of each fire organization. Typically, these are OSHA regulations in states that have OSHA approved plans, NFPA standards, and local laws and ordinances addressing workplace safety. The second factor is *ethics.* Ethical factors involve the moral obligation an organization has to ensure a safe work environment for its employees. The designation of a safety officer and the development of a comprehensive health and safety program demonstrate the organization's support for the lives and welfare of its employees. The third and final factor is *economic considerations*. It is cost-effective to work towards preventing injury and death in the workplace. Cost savings are realized through reduced employee sick leave usage, decreased worker's compensation costs, reducing the need to train replacement employees, reducing the need to repair or replace equipment, and avoiding possible litigation. Proactive health and safety measures help protect and preserve a fire organization's material and human resources.

McGill (1996) underscores the ethical factor as follows:

> The acceptance of injuries and deaths is passé and no longer acceptable for the majority of people. When confronted with injury or death of a fellow worker or relative, people now get mad, become questioning, take action, and most of all, are concerned and caring. The survivors of the victims, in fact, become the most passionate of all crusaders for the improvement of safety. …Ethics and responsibility no longer can accept the statistics and liabilities of being unsafe. (p. 10)

McGill (1996) also corroborates the economic considerations of an occupational health program; "Industry has known the value of an effective safety program for years, in terms of successfully and profitably doing business" (p. 10). Both considerations, according to McGill,

emphasize the need for emergency services to employ a “well balanced department safety program both at the incident scene and throughout the occupational process…” (p. 10).

Smith (2002) argues that the IC has so many demands to juggle that safety is often overlooked until it is too late. The safety officer becomes another set of eyes for the IC, eyes that are specifically oriented to monitoring scene safety. The task orientation of firefighters often makes them oblivious to hazards. The astute on-scene safety officer can help by pointing out hazards and enhancing their safety awareness.

In recent years the fire service safety officer role has evolved into two distinct, yet allied, functions. The first came to the fore in the ‘70s as fire service organizations began to address the non-emergency occupational health and well being of their personnel. As a result, the Health and Safety Officer (HSO) became the designation for the administrator of the fire organization’s occupational health and safety program. In this role the fire service safety officer is involved in risk management planning, OSHA compliance (where required), wellness, safety and health education, facility and equipment inspection, accident investigation, infection control, post-incident analysis and chairs or is a member of the department’s safety committee. This individual may or may not respond to emergency incidents.

The second role evolved in conjunction with the Incident Management System (IMS) and the need for a safety officer to respond to the emergency scene. The Incident Safety Officer (ISO) may be the same individual as the HSO, or may be another officer designated as the ISO when called upon. The procedure varies widely across the nation. The ISO addresses emergency scene safety concerns and is involved with emergency scene risk assessment, resource evaluation, hazard identification and communication, action plan review, safety briefings, hazard zoning, scene accident investigation, and post-incident analysis. The ISO may

also be a member of the department safety committee (Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001; Loflin, 1996).

The National Fire Protection Association (NFPA) has established a standard, 1521, *Standard for Fire Department Safety Officer*, which describes the recommended roles, responsibilities, qualifications and training for both the HSO and ISO roles in the fire service. NFPA 1521 lays the ultimate responsibility of the fire organization's occupational health and safety at the feet of the fire chief. However, the fire chief is to designate a health and safety officer (HSO) to manage the program. The HSO position is mandated by the standard, may be a part or full time position (depending on the size of the organization) and reports directly to the fire chief or his/her designated representative. The standard allows for assistant safety officers to aid the HSO in the performance of his/her duties or to function as the HSO in his/her absence. The need to monitor safety and address safety concerns mandates that the role be filled on a continuing basis (NFPA, 2002a).

According to NFPA 1521 (2002a), scene safety is the ultimate responsibility of the incident commander (IC). However, in situations where the size or nature of the incident demands it, the role of incident safety officer (ISO) may be delegated. The ISO may be a pre-designated position, or may be assigned by the IC on an as-needed basis. Like the HSO, the ISO role needs to be continually filled by either the IC, a pre-assigned ISO, an assistant ISO or a designated ISO. The size, nature and complexity of an incident may require that the ISO be assigned assistants to assist him/her in the management of scene safety.

While similar in some respects, the qualifications and duties for the HSO and ISO positions differ in relation to the settings in which they work (Sachs, 2001). The HSO's duties are primarily focused in the non-emergency or pre-emergency setting, while the ISO is

predominantly employed at the emergency scene. While the bulk of the HSO's functions are performed in the non-emergency arena, it is obvious that his/her work has a considerable impact at the emergency scene. In some fire organizations, the HSO's role may include that of the ISO as well, in which case the duties and responsibilities will overlap. Loflin (1996) states; "The health and safety officer and the incident safety officer may be the same person, depending on organizational needs". However, "It's imperative that the incident safety officer's functions be clearly defined and understood" (p. 38). For most fire service organizations, there will be situations when the HSO or pre-designated ISO is unavailable and an on-scene safety officer must be assigned. For this reason, the two roles have been differentiated in recent years and have appeared outlined as such in NFPA 1521 since 1997 (Sachs, 2001; Dodson, 1999; Rubin, 1996; McGill, 1996; Fleming, 1996; Daniels, 2001).

According to NFPA 1521, the HSO must be an officer who meets the qualifications of a Fire Officer Level 1, as outlined in NFPA 1021, *Standard for Fire Officer Professional Qualifications*. Additionally, it is required that the HSO have and maintain knowledge of current laws, codes and standards related to occupational safety and health in the fire service. The HSO must also be conversant in occupational safety and health hazards in emergency operations, principles and techniques of safety management, health and fitness maintenance, and infection control practices (as defined by NFPA 1581, *Standard on Fire Department Infection Control Program*).

The HSO has the responsibility to identify and correct safety and health hazards. The HSO has the authority to intervene and cause to be corrected any situation that imminently threatens the safety of fire department members. The HSO identifies and addresses non-imminent threats and safety concerns through the administrative processes of the organization.

Where the HSO does not have the authority to correct hazards, he/she has the authority to bring these hazards to the attention of someone who has the authority to correct them (NFPA, 2002a).

An abbreviated summary of the functions of the HSO according to NFPA 1521, *Standard for Fire Department Safety Officer,* is located in Appendix A. Loflin (1996) adds supervision of the department's light or limited-duty program to the functions outlined in NFPA 1521. This program involves the oversight of personnel that are assigned to light/limited duty due to either occupational or non-duty related injury or illness. In this role the HSO works to assign personnel to duties that will not subvert the treatment regimen of the attending physician, ensures compliance with the organization's policy covering light/limited duty assignments, and liaisons with Risk Management, Occupational Health, or any other parties concerned with the process.

According to NFPA 1521 (2002a), the ISO must also meet the qualifications for a Fire Officer Level 1 as outlined by NFPA 1021, *Standard for Fire Officer Professional Qualifications*. The ISO must have and maintain the knowledge and skill to address incident scene safety in a variety of situations. These include, but are not limited to fire suppression, emergency medical operations, hazardous materials operations, and other special operations (e.g. mass casualty, trench rescue, confined space rescue, fast-water rescue, building collapse, natural disaster etc.). The ISO must be conversant in the health and safety hazards and concerns associated with emergency operations. The ISO must also be knowledgeable in building construction, in his/her organization's personnel accountability system, and in the rehabilitation of emergency personnel (NFPA, 2002a).

As with other NFPA standards, NFPA 1521 is considered a nominal standard, and it is acceptable, if not desirable, for an organization to exceed the standard. Loflin (1996) suggests that the ISO have experience as a company, battalion or chief officer. As a result the ISO will be

familiar with the fire organization's IMS plan, have command or incident management experience, have the ability to recognize unsafe scene conditions and hazards and be able to enforce the organizational rules and regulations related to safety. McGary (1999) recommends the ISO be at least a Fire Officer II with additional training in safety through courses offered by the Fire Department Safety Officer's Association. Rubin (1995) contends; "The ISO …should be a well trained and experienced veteran who can demonstrate 'command presence'; assigning the job to a chief level officer can add 'horsepower' to the position" (p. 34). Rubin describes the training required of the ISO as similar to that of the IC with an emphasis in safety. Rubin, Maniscalco & Christen (1999), insist the ISO must be as experienced and as qualified as the IC. "Therefore, we suggest that the role of ISO be assigned to a command-level officer, since it will take the experience and training of a "salty officer" to be successful as an ISO at major incidents…" (p. 85).

Fleming (1996) observes, "…the safety officer must also possess the essential abilities and attributes associated with effective leadership" (p. 13). He identifies these abilities and attributes as having respect *for* others, having the respect *of* others, team orientation, and the willingness to do whatever it takes to succeed in the role. The key ingredients, however, according to Fleming (1996), are the desire to do the job and recognition of its importance to the mission of the fire organization. Rubin, Maniscalco & Christen (1999) suggest that the successful ISO must also be a good role model. It is not enough for the ISO to enforce safety rules; he/she must practice what he/she preaches. Additional qualities essential to the ISO, include being skilled at communications, decisive, forward-looking and flexible. The ISO must be able to remain calm, disciplined, objective and self-controlled in the midst of chaos - all characteristics of command presence (1999).

The ISO has the authority on the incident scene to alter, suspend or terminate any activity that is deemed to be unsafe or presents an imminent hazard to the lives or safety of emergency personnel. The ISO must immediately report any activity that is altered, suspended or terminated for safety reasons to the IC. The ISO may also address any operations, conditions or hazards that pose a non-imminent hazard to the lives and/or safety of emergency personnel operating at an incident through consultation with the IC. When due to the size, nature or complexity of the incident the ISO is assigned assistant ISO personnel, these personnel are invested with the same authority to address imminent and non-imminent hazards at the emergency scene (NFPA, 2002a).

S. Fleming (1996) makes the following assertion; "Many rescuers have died trying to rescue a body". He then poses the question; "Why? Were those rescuers taught risk/benefit analysis?" (p. 70). Bachman (1997) advocates renaming the position of ISO more in accordance with what the function of the position entails. Bachman suggests the fire service ISO is really a *risk manager*. "Firefighting", says Bachman, "is, indeed a risk oriented profession. Firefighting, by virtue of its job description, carries with it the expectation of injuries and loss" (p. 7). The idea that the fireground can be safe is a contradiction in terms. Therefore, the role of the safety officer is to manage or minimize the inherent risks associated with the emergency scene, be it fire or something else. As a risk manager, Bachman argues, it is not the safety officer's job to eliminate risk, but "to make fire department leadership aware of unacceptable risks". As risk managers, "we encourage and lead the way for strategies, tactics and practices which minimize the risks associated with the job" (p. 8).

Beirne & Simpson (2002) argue that, at times, safety can be taken too far. The dynamic nature of the emergency scene environment means we cannot always predict the outcomes along

narrow lines. Common sense has been thrown out the window for "what if?" "The problem arises when we 'what if' to the point where we take no action" (p. 83). Risk vs. benefit is an ongoing analysis; "Our job as fire service members is to weigh the possibility of loss or danger to ourselves against the potential help or profit our customers might receive, then make good decisions based on common sense" (p. 83). Rubin (1995) stresses the need for the ISO to "play the devil's advocate and ask tough questions about risk versus benefit" (p.34). The benefit to the customer must always be weighed against the risk of the considered tactic. Daniels (2001) observes; "Many departments have all but shed the ideology that the lives of civilians who are more than likely already lost are more important than the lives of firefighters" (p. 32). Brunacini (2002) offers the following widely endorsed risk/benefit formula:

- We will risk our lives a lot, in a highly calculated and controlled manner, to protect a savable human life.
- We will risk our lives a little, in a highly calculated and controlled manner, to protect savable property.
- We will not risk our lives at all to protect lives or property that are already lost. (p. 39)

Who is the ISO and when should he/she respond to the scene? R. S. Fleming (1996) argues; "The appointment of a safety officer(s) is one of the most important staffing decisions facing the contemporary fire department" (p. 12). There are fundamentally two approaches to the assignment of an ISO, the "standing assignment" or the on-scene assignment. The standing assignment philosophy places emphasis on the qualifications of the ISO. The candidate is selected based on "experience, knowledge, qualifications and willingness" (R.S. Fleming, 1996, p. 12). The on-scene assignment approach emphasizes the creation of the ISO position on an as-

needed basis. Thus, the ISO often becomes a "by default" assignment, and the individual drafted may not be the best person for the job. Rubin (1995) offers a possible solution, arguing that while "a chief officer lends 'horsepower' to the role of ISO, all company level officers should be trained in incident safety"(p. 34).

If a fire organization employs a standing ISO, procedures must be developed to define when the ISO's responds. Dodson (1999) recommends the automatic response of the standing ISO to confirmed residential or commercial structure fires, wildland interface fires, incidents involving the use of specialty teams (e.g. hazardous materials, technical rescue, fast water rescue etc.), target hazard incidents, aircraft incidents, and incidents involving weather extremes. Loflin (1996) suggests the necessity of an ISO's response to the following incidents:

- Any second alarm or greater (incident).
- A working fire in a commercial structure.
- Large-scale working incidents such as wildland fires and hazmat incidents.
- Special operations such as technical rescue incidents (trench, high-angle or water rescue) and mass casualty incidents.
- Injuries to firefighters.
- Accidents at an incident scene or incidents in which apparatus and/or equipment is damaged.
- When the department provides mutual aid or automatic aid.
- When requested by the incident commander. (p. 38)

Dodson (1999) recommends the automatic delegation of an ISO under following circumstances:

- Working incident – 100% of first due on scene resources are committed and more are needed.

- Incident command's span of control exceeds three -
- Mutual aid requests
- Firefighter down/missing/injured
- At the Incident Commander's discretion

NFPA 1561, *Standard on Emergency Services Incident Management System* (2002 ed.), makes the following recommendation for automatic response of an on-call ISO:

1) Commercial fires
2) Multiple alarm
3) Firefighter injury or firefighter transported for treatment
4) Hazardous materials incident
5) Technical rescue incident
6) At the request of the incident commander (A.5.5.2)

Whether the ISO is pre-assigned or assigned on-scene, his/her role "must be clearly defined and understood by all personnel. Failure to clearly define the safety officer's role can result in undesirable consequences, including role ambiguity and conflict" (R.S. Fleming, p. 13, 1996). R. S. Fleming further argues that a clear *job description* and *job specification* is essential for the safety officer to avoid both ambiguity and conflict. R. S. Fleming defines job description as "a written statement that defines the responsibilities of the safety officer", including "purpose of the job, responsibilities, task elements, tools employed, working conditions, and work relationships" (p. 13). Job specification is defined as "the necessary qualifications to function successfully as the safety officer", including "knowledge, skills, and attributes that will be required of the successful job incumbent" (p. 13).

An abbreviated summary of the functions of the ISO according to NFPA 1521, *Standard for Fire Department Safety Officer,* is located in Appendix A. The primary responsibility and function of the ISO is "the management of the safety and health process at an incident scene" (Loflin, 1996, p. 38). On the incident scene, the ISO functions as a part of the IC's command staff, and reports directly to him/her. The ISO provides counsel and or consultation relative to safety issues and concerns to the IC. According to Loflin (1996), the ISO must give particular attention to the following concerns:

- Use of appropriate protective clothing and equipment by all members at the incident
- Structure/vehicle/environmental condition and stability
- Prevention of freelancing
- Personnel accountability
- Rapid intervention crews
- Safety zones
- Rehab (p. 39)

McGary (1999) includes observation and review of basic incident evolutions. The ISO must observe and assure that tools and equipment are being used properly in their appropriate applications. Also, if personnel are injured at the scene, the ISO should coordinate and facilitate the investigative process.

Smith (2002), Rubin, Maniscalco and Christen (2000) underscore the need for the ISO to be proactive; "The ISO should be proactive whenever possible, attempting to anticipate problems before they develop" (Smith, 2002, p. 11). Rubin, Maniscalco and Christen observe; "The bottom line is that the ISO must always be prepared for what might happen next" (2000, p. 54).

Experience, the knowledge of building construction, firefighting and special operations give the ISO the ability to "sequence" events, and forecast probabilities.

Dodson (1999) proposes the *ISO Action Model*, which he describes as "a cyclic, four-area model that allows the incident safety officer to mentally process the surveying and monitoring of typical incident activities and concerns" (p. 98). Dodson insists that the ISO Action Model has no specific starting point or direction of flow, it is not linear, but rather suggests, at any point in time, the four on-going elements of the ISO function on the emergency scene. A critical element is the model's continuous or cyclic process of evaluation. The ISO repeatedly addresses each area throughout the course of an incident until its conclusion. The process aids in the constant situational awareness of the ISO and enables him/her to respond in a timely manner to mitigate hazards and concerns. To make the model easy to remember and process, Dodson says to think of it "as the four *Rs*" (p. 99), these include *Resources, Reconnaissance, Risk and Report*. *Resources* suggests the ongoing evaluation by the ISO of the available resources to implement the IC's incident action plan. The critical resources requiring continuous evaluation are "time, personnel, and equipment" (p. 100). *Reconnaissance* suggests the need to continuously survey the scene. Dodson divides reconnaissance into two arenas, environment and operations. Environment addresses safety issues associated with factors such as building integrity, weather, access etc…. Operations addresses safety issues associated with the tasks, tools, and personnel operating at the scene. *Risk* involves the concept of risk management, or determining through counsel with the IC what is an acceptable or unacceptable risk to on-scene personnel. *Report* addresses the need for the ISO to provide continuous updates to the IC regarding all of the above. Report also reminds the ISO of the need to develop safety briefings, submit written reports and review action plans.

Dodson (1999) and Sachs (2001) propose the application of *the Classic Risk Management Process* for both the HSO and ISO functions. The Classic Risk Management process involves the following five steps:

1) Hazard/Risk Identification: The first step in the risk management process is to identify hazards or risks. Sachs suggests, "a good rule of thumb is to anticipate the worst that can happen when identifying risks" (p. 53). The idea is, if worst-case scenarios are planned for, anything less will be manageable.
2) Hazard/Risk Evaluation: The second step in the process is evaluation of the hazard. Hazards are evaluated on an individual basis based on their frequency and severity. Frequency is related to how likely the hazard is to occur, and severity is related to the potential for damage or injury. Dodson (1999) offers the following matrix for use in risk evaluation:

| | | **Frequency** | | |
|---|---|---|---|---|
| | | High | Moderate | Low |
| **Severity** | High | High/High | High/Moderate | High/Low |
| | Moderate | Moderate/High | Moderate/Moderate | Moderate/Low |
| | Low | Low/High | Low/Moderate | Low/Low |

(p. 33)

3) Hazard/Risk Prioritization: Hazards and risks can be prioritized for action based upon their evaluation according to the matrix above. Obviously, hazards or risks that have a high potential in both frequency and severity should be the first addressed or corrected.

4) Hazard/Risk Control: There are three fundamental approaches to hazard/risk control, *avoidance*, *transfer* and *adaptation*. *Avoidance* involves avoiding the risk or hazard altogether, an option that is difficult to implement on the emergency scene, but may have application in the non-emergency setting. *Transfer* involves passing on the responsibility of the hazard or risk to another entity, again, a difficult approach to implement for emergency responders. The method that most often applies in emergency situations is *adaptation*, an approach that seeks to minimize the emergency responder's exposure to hazards and risks. Dodson (1999) defines this process as "mitigation" and offers the following "ten classic countermeasures":

    - Prevent the creation of the hazard.
    - Reduce the extent of the hazard.
    - Prevent the release of the hazard.
    - Modify the rate of release of the hazard.
    - Separate the hazard by time and space.
    - Separate the hazard by a barrier.
    - Modify the basic quality of the hazard.
    - Make the hazard resistant to injury.
    - Counter the damage done by the hazard.
    - Stabilize/repair the damage done by the hazard. (p. 35)

5) Hazard/Risk Monitoring: Once measures have been taken to mitigate the hazard or risk, the ISO must continually assess the mitigation for its effectiveness and modify or change the approach if needed to ensure success. Monitoring also involves the ongoing, cyclical evaluation of hazards and risks at the emergency scene, which are constantly changing.

Sachs (2001) breaks down the monitoring process into three parts; monitoring for unsafe acts, monitoring for unsafe conditions, and monitoring for unsafe operations. It is by means of the monitoring process that the ISO can successfully forecast potential risks and hazards and take action to prevent or mitigate them before they occur.

The job of the incident safety officer can quickly become overwhelming and cause a syndrome where the ISO becomes the on-scene *bunker cop* or *safety cop.* In this mode the ISO can allow the focus on the familiar and obvious to cloud his/her ability to see the big picture and remain proactive (Sachs, 2001; Dodson, 1999; Martinek, 1995). Martinek (1995) observes; "The use of a checklist can be very advantageous in dealing with major concerns during an incident" (p. 6). The rapidly changing environment of the emergency scene creates incredible pressure on the ISO. A checklist can help him/her keep his/her bearings and deal successfully with priorities. McGary (1999) seconds the use of an ISO checklist; "When leaving the command post, the OSSO (on scene safety officer) should have a Safety Sector check list in hand. This list provides specific information related to the incident and reminders of what needs to be watched" (p. 12).

What should the safety officer checklist include? Martinek (1995) suggests a two-page checklist. On the first page of the ISO checklist is a reminder to check in with the incident commander, to wear a helmet or vest that clearly identifies the ISO on scene, to check in with any special team safety officers operating on the scene, to check in with division or sector officers that have been assigned, and a reminder that the ISO has the authority and responsibility to address any imminent threat to the safety of personnel on scene. The second page of Martinek's checklist is divided into five categories of concern to the ISO: *Personnel, The Building, Operations, Command and Accidents/Injuries*. Under *Personnel*, Martinek suggests items such as the use of personal protective equipment (PPE), accountability, free-lancing and

rehab. *The Building* includes such concerns as collapse potential, roof construction, the effect of master streams, age and repair of the building, and if the building is under construction or renovation. *Operations* include issues such as backdraft, flashover, competing strategies (i.e. offensive vs. defensive), ladder operations, apparatus positioning, collapse zone, structural integrity and monitoring of air quality. *Accidents/Injuries* reminds the ISO to ensure the appropriate treatment and transport of personnel injured on the scene, to complete the required reports for accidents or injuries and to gather PPE and any other items or evidence pertinent to the ensuing accident/injury investigation.

In most cases, the ISO is more than likely not an expert in all areas of emergency response. Specialized emergency operations involving components such as hazardous materials, confined space rescue, etc.-require advanced levels of knowledge and skill in those disciplines to anticipate the potential associated risks and hazards. When possible, the ISO should enlist the aid of an assistant ISO with expertise in the particular specialized operation; however, this may not always be possible or may be delayed. In such cases, specialized checklists can be helpful to the ISO to take the necessary measures to ensure the safety of personnel operating in specialized areas in which the ISO has limited or no expertise (McGary, 1999). A number of sources provide sample check lists for fire, hazardous materials and special operations (Martinek, 1995; Steil & Melton, 1995; McGary, 1999; Smith, 2002; Bevelacqua & Stilp, 1998; Rubin, Maniscalco & Christen, 2000; Sachs, 2001; Dodson, 1999; Stowell, Brakhage & Smith, 2001). Loflin (1996) cautions; “There is absolutely nothing wrong with the incident safety officer using a checklist to monitor the scene. A note of caution though: The incident safety officer must guard against becoming dependant on the checklist and forget to use common sense and experience to look at the big picture” (p. 39).

Recently, there has been a movement in the fire service towards the designation of a Safety Section as opposed to a single ISO at large or complex incidents. Morris (2001a), contends; "During a fire in a large four-sided, and perhaps multi-floored… building, it would be impossible for a single Safety Officer to carry out fireground duties and simultaneously participate in ongoing safety planning with the IC at the command post" (p. 14). Morris advocates the establishment of a Safety Section in such cases. In this scenario, the Safety Section would be supervised by a chief officer as the Section Chief, who would employ a number of Safety Sector officers to necessary locations and/or functions on the emergency scene. The Safety Section would be assigned its own radio channel so as not to interfere with fireground operations, however, each Safety Sector officer would also carry and additional radio in order to monitor fireground operations traffic. Phoenix Fire Department, under the guidance of Assistant Chief Morris, trained in and experimented with the Safety Section concept for a year with the following observed benefits:

- The ability to cover all critical areas of he incident with safety staff.
- A structured organization and communication system to manage the safety function.
- The enhanced focus of safety related progress reports to the command post.
- The enhanced safety of all firefighters on the fireground.
- The improved safety information for the IC to make better command decisions.
- The fact that the Safety Section Chief is a chief officer improves the IC and Safety Officer relationships. (Morris, 2001a, p. 14)

In conjunction with the Safety Section concept Morris (2001b) suggests the concept of "Rules of Engagement" for structural firefighting. Morris notes that the fire service has readily embraced rules of engagement in other emergency disciplines such as hazardous materials;

however, we still have a tendency to commit resources to interior operations in structures that are abandoned and have little value. In the overhaul arena, we allow firefighters to eat smoke that we have proven is toxic and carcinogenic. The Safety Section concept, Morris argues, gives the fire service a much better chance to address these issues at the emergency scene. "The ultimate goal is to have a command system with a safety system integrated within it" (Morris, 2001b, p. 11).

NFPA 1561, *Standard on Emergency Services Incident Management System,* Annex A (2002 ed.), offers the following direction:

> The size, complexity, or duration of an incident can necessitate the need for additional assistant safety officers. Incidents such as high-rise fires, hazardous materials incidents, and special operations require additional assistance. In these cases, the incident safety officer should request from the incident commander the establishment of a safety unit. Under the direction of the incident safety officer, assistant incident safety officers can be assigned to handle scene monitoring, action planning, risk management, interior safety at a high-rise incident or operations safety at hazardous materials incidents or special operations, or serve as relief for the incident safety officer during extended incident operations. (A.5.6.10)

The review of the literature above significantly influenced the job description and the operational guidelines developed to fulfill the purpose of this applied research project. The professional journals cited in large part either influenced or mirrored NFPA Standards in their description of the need, role and duties of the fire service safety officer. The author leaned heavily on these sources for the action research phase of the project. The need for the safety officer, the two distinct roles of the safety officer, and the necessity of well defined

qualifications, responsibilities and procedures outlining the safety officer's functions in both emergency and non-emergency settings are well established by the literature review. The literature also provided numerous examples that were helpful in the development of three operational checklists for use by the Englewood Fire Division Incident Safety Officer.

## PROCEDURES

### Definition of Terms

Assistant Safety Officer: A member of the fire department assigned and authorized by the fire chief to assist the fire department health and safety officer or incident safety officer in the performance of his/her duties. (National Fire Protection Association, 2002a)

Hazard: The potential for harm or damage to people, property, or the environment. Hazards include the characteristics of facilities, equipment systems, property, hardware, or other objects, and the actions and inactions of people that create such hazards. (NFPA, 2002a)

Health and Safety Officer (HSO): The member of the fire department assigned and authorized by the fire chief as the manager of the occupational safety and health program. This individual can be the incident safety officer (ISO) as well, or ISO can be a separate function. (NFPA, 2002a)

Health Hazard: Any property of a material that either directly or indirectly can cause injury or incapacitation, either temporary or permanent, from exposure by contact, inhalation, or ingestion. (NFPA, 2002a)

Imminent Hazard: An act or condition that is judged to present a danger to persons or property that is so urgent and severe that it requires immediate corrective or preventive action. (NFPA, 2002a)

Incident Action Plan (IAP): The objectives reflecting the overall incident strategy, tactics, risk management, and member safety that are developed by the incident commander. Incident action plans are updated throughout the incident. (NFPA, 2002a)

Incident Commander (IC): The fire department member in overall command of an emergency incident. (NFPA, 2002a)

Incident Management System (IMS): An organized system of roles, responsibilities, and standard operating procedures use d to manage and direct emergency operations. Such systems are often referred to as incident command systems (ICS). (NFPA, 2002a)

Incident Safety Officer (ISO): An individual appointed to respond to or assigned at an incident scene by the incident commander to perform the duties and responsibilities of the scene safety officer. This individual can be the health and safety officer (HSO), or the ISO can be a separate function. (NFPA, 2002a)

Incident Safety Plan: The strategies and tactics developed by the incident safety officer (ISO) based upon the incident commander's incident action plan (IAP) and the type of incident encountered. (NFPA, 2002a)

Incident Scene Rehabilitation (Rehab): The tactical level management unit that provides for medical evaluation, treatment, monitoring, fluid and food replenishment, mental rest, and relief from climatic conditions of the incident. (NFPA, 2002a)

Risk: A measure of the probability and severity of adverse effects. These adverse effects result from an exposure to a hazard. (NFPA, 2002b)

Risk Management: Identification and analysis of exposure to hazards, selection of appropriate risk management techniques to handle exposures, implementation of chosen techniques, and monitoring of results, as respects the safety and health of members.

Risk Management Plan: A comprehensive written document that considers all fire department policies and procedures and includes goals and objectives to ensure that the risks associated with the operations of the fire department are identified and effectively managed. (NFPA, 2002b)

Safety Unit: A member or members assigned to assist the incident safety officer (ISO). The tactical level management unit that can be comprised of the ISO alone or with additional assistant safety officers assigned to assist in providing the level of safety supervision appropriate for the magnitude of the incident and the associated hazards. (NFPA, 2002a)

Special Operations: Those emergency incidents to which the fire department responds that require specific and advanced training and specialized tools and equipment. Special operations include water rescue, extrication, hazardous materials, confined space entry, high-angle rescue, aircraft rescue and firefighting, and other operations requiring specialized knowledge and training. (NFPA, 2002a)

Tactical Level Management Unit: A management unit identified in an incident management system commonly known as “division”, “group” or “sector”. (NFPA, 2002a)

## Research Methodology

The goal of the research was to develop a job description and operational guidelines for the Englewood Fire Division Safety Officer. The resulting research incorporated evaluative, descriptive and action elements. The research was evaluative in its analysis of industry standards and resources that describe the role and responsibilities of the fire organization safety officer. A literature review was conducted to evaluate current fire industry standards and practices relative to the qualifications and role of the fire department health and safety officer (HSO) and the fire department incident safety officer (ISO).

The research was descriptive in the evaluation of the current expectations and practices of the Englewood Fire Division relative to occupational safety and health and the role of the Englewood Fire Division Safety Officer. The descriptive research involved the evaluation of the job descriptions of the three staff chiefs of the Englewood Fire Division that currently fulfill some of the roles and responsibilities of the HSO and ISO positions as outlined in the evaluative research. The descriptive research also analyzed the effectiveness of the current staff members in fulfilling the roles and responsibilities of the HSO and ISO in relation to the findings of the evaluative research.

Finally, the research resulted in action being taken to develop a Health and Safety Officer job description and an operational policy for the response and functions of the Englewood Fire Division Incident Safety Officer. The Health and Safety Officer job description was developed in conjunction with the City of Englewood Position Description format and included sections defining the position, reporting relationships, qualifications, authority, duties and responsibilities (divided into administrative and emergency scene contexts), preparation and training, knowledge, skills and abilities, and approvals. A Fire Division Operations Manual Procedure was also developed to provide a guideline for incident safety officer response, designation, and duties. The policy included incident safety officer checklists for basic fire incidents, hazardous materials incidents and technical rescue incidents. The job description was developed in conjunction with recommendations gleaned from the evaluative research. Particular attention was given to specifications outlined in the NFPA Standards 1521, *Standard for Fire Department Safety Officer*, 2002; 1561, *Standard on Emergency Services Incident Management System*, 2002; and 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2002 in the development of the job description and guideline.

**Limitations**

The health and safety officer's role in the fire service organization, as defined by current standards, involves the development and management of a number of comprehensive programs. Some of these programs already exist in the Englewood Fire Division, and some, as yet, do not. For example, the development, implementation and management of an official written risk management plan, is one area that remains to be addressed. There are pieces of this plan in place in the operational guidelines and standard operating procedures of the Fire Division, however, these need to be compiled in an organized fashion, integrated into the health and safety program and incident management system of the Fire Division. Such a plan will allow the Fire Division Safety Officer to be a much better risk manager by providing an ongoing assessment of the risks associated with the job and what the organization is doing to address them.

Additionally, the research identified a need to train multiple officers in the Fire Division in the role of the Incident Safety Officer. While the Division employs a "standing" incident safety officer, there will inevitably be situations where he/she will be either delayed or unable to respond. In these circumstances the Division must be able to look to well trained and prepared officers to fill the need. While this research project established a good starting point by defining the role, responsibilities and functions of the Englewood Fire Division Safety Officer, much work remains to be done to bring the Fire Division up to current standard in its occupational health and safety program.

# RESULTS

**Research Question #1: Why does the Englewood Fire Division need a safety officer?**

The hazards of the firefighting profession are well documented. On an annual basis approximately 100 firefighters are killed and over 100,000 are injured in the line of duty (Sachs, 2001; Dodson, 1999; Dunn, 1992; Rubin, 1995). Research suggests that the injury and death statistics are just the tip of the iceberg in terms of unsafe situations and practices (Russell, 2002). The Safety Triangle, developed by Frank Bird, indicates that for every fatality that occurs in the workplace, 600 deviations from safe practice have occurred (Russell, 2002). The fire service needs to develop a culture of safety. Such a culture involves the participation of every member of the fire organization in the recognition and mitigation of hazards, without fear of repercussion. The creation of a safety culture begins at the top of the fire service organization and demands the expenditure of resources, not the least of which is the establishment of a department safety and health officer. This individual can significantly aid today's fire service organization in the development of a comprehensive health and safety program. Additionally, OSHA legislation and industry standards (NFPAa, 2002; NFPAc 2002) mandate the establishment of a health and safety officer for the fire service organization (Dodson, 1999; Russell, 2002; Daniels, 2001).

Three factors underscore the need for a fire service safety officer: First, is legal responsibility; the fire organization is bound by OSHA regulations, fire service standards, local laws, codes and regulations to address workplace safety. Second, is ethics; the fire service organization has a moral obligation to care for the lives and welfare of its members. Last, is economics; it is good business to prevent the losses associated with accidents, injuries and deaths (Stowell, Brakhage & Smith, 2001).

Statistically, over half the annual deaths and injuries to firefighters occur on the emergency scene. On the emergency scene, the safety officer helps the incident commander monitor scene safety. The incident safety officer is another set of eyes and ears that are specifically attuned to risks, hazards and situations that pose danger to the personnel operating at the scene. The incident safety officer enhances the safety awareness of firefighters that are focused on tasks, not hazards (Smith, 2002). The high rate of fatalities and injuries in the firefighting profession, the legal and ethical obligations, economic benefits, and the enhanced safety provided by an incident safety officer operating at the emergency scene, all serve to establish the need for the Englewood Fire Division to employ a Safety Officer.

**Research Question #2: What are the general qualifications, duties and responsibilities of a fire service safety officer according to the NFPA and other fire service resources?**

The qualifications of the fire service safety officer are closely linked with the role he/she is to play. In the fire service today, the safety officer may be called upon to fulfill one or both of two distinct roles. The first role is that of the organization's health and safety officer (HSO). The HSO function originated in the early 1970's following the establishment of the Occupational Health and Safety Administration (OSHA), and was primarily oriented towards the non-emergency occupational safety and health of fire department members. The HSO is tasked with the administration of the fire organization's occupational health and safety program. His/her duties include risk management planning, OSHA compliance (where required), wellness, safety and health education, facility and equipment inspection, accident investigation, infection control, post-incident analysis and participation in the organization's occupational health and safety committee (Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001; Loflin, 1996). The HSO may or may not be tasked with responding to the emergency scene as an incident safety

officer. NFPA 1521, *Standard for Fire Department Safety Officer*, 2002 ed., mandates the designation of an HSO to manage the occupational health and safety program of the fire organization. The standard also outlines the necessary qualifications for the fire HSO. The HSO must meet the requirements of a Fire Officer Level 1, as described by NFPA 1021, *Standard for Fire Officer Professional Qualifications*. The HSO must be conversant in the current laws, codes and standards related to occupational safety and health in the fire service. The HSO must also be knowledgeable in occupational safety and health hazards in emergency operations, principles and techniques of safety management, health and fitness maintenance, and infection control practices.

NFPA 1521 (2002a) also defines the responsibilities of the HSO. The HSO's primary responsibility is to identify and correct safety and health hazards. The HSO is invested with the authority to intervene in and correct any situation that imminently threatens the safety of fire department members. The HSO works within the administrative processes of the fire organization to address non-imminent hazards and risks to fire personnel. In such cases where the HSO does not have the direct authority to cause correction of risks and hazards, he/she has the responsibility to cause correction through those who do. NFPA 1521 includes a lengthy list of the specific duties and functions of the HSO, which have been alluded to above, Appendix A briefly summarizes these in detail.

The second role of the fire service safety officer is that of incident safety officer (ISO). The ISO role evolved from the need to address the safety of personnel operating at the incident scene and has been included in the staff of the incident commander within the Incident Management System (IMS) from its inception. The primary focus of the ISO is the safety of personnel operating at the emergency scene. The ISO may or may not be the same individual as

the HSO. On many smaller fire departments, one individual fills the two roles. In larger organizations the two roles may be divided. Regardless, it is important that the ISO's role be clearly defined and understood by all personnel (Loflin, 1996). The ISO is tasked with evaluating emergency scene safety concerns and is involved with risk assessment, resource evaluation, hazard identification and communication, incident action plan (IAP) review, safety briefings, hazard zoning, accident investigation and post-incident analysis. The ISO may also have the non-emergent duty to participate on the department occupational safety and health committee (Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001; Loflin, 1996). The ISO may be pre-designated and respond as dictated by organizational policy, or he/she may be appointed by the incident commander on an as-needed basis. The size, duration or complexity of an incident may require the assignment of assistants to the ISO to help him/her manage scene safety. In such cases it is recommended that a Safety Section, headed by a chief officer, be established (Morris, 2001a; 2001b).

According to NFPA 1521 (2002a) the ISO must meet the requirements of a Fire Officer Level 1 as described by NFPA 1021, *Standard for Fire Officer Professional Qualifications*. The ISO must have and maintain the skills necessary to address incident scene safety in a variety of emergency contexts including, but not limited to, fire suppression, emergency medical operations, hazardous materials operations, and other special operations. The ISO must also be knowledgeable in the area of health and safety hazards specific to emergency operations. A working knowledge of building construction, the organization's personnel accountability system, and personnel rehabilitation is important to this qualification. Additional qualifications include experience as a company, battalion or chief officer, experience as an incident commander, familiarity with the IMS, and advanced training in safety (Loflin, 1996; McGary 1999; Rubin,

1995; Rubin, Maniscalco & Christen, 1999). The ISO must also possess the qualities of a good leader. Having respect for, and the respect of others, a team orientation, and a willingness to do what it takes to succeed are characteristics essential to the success of the ISO. Finally, the ISO must be a skilled communicator and a role model. The ISO must practice what he/she preaches in regards to safety (Rubin, Maniscalco & Christen, 1999).

Like the HSO, the ISO has the authority to alter, suspend or terminate any activity that is deemed to be unsafe or presents an imminent hazard to the lives or safety of emergency personnel operating at an emergency scene. The ISO must report any such action to the incident commander immediately. The ISO works through the incident commander to address all non-imminent hazards and risks at the emergency scene. When due to the size, duration or complexity of an incident, the ISO is assigned assistants; these shall also have the same authority to address imminent and non-imminent hazards and risks at the scene (NFPA, 2002a).

A key to the success of the ISO is adopting the perspective of a risk manager. The ISO should always be weighing the risk or hazard of a given operation with the benefit to be gained. The following risk benefit formula is widely accepted:

- We will risk our lives a lot, in a highly calculated and controlled manner, to protect a savable human life.
- We will risk our lives a little, in a highly calculated and controlled manner, to protect savable property.
- We will not risk our lives at all to protect lives or property that are already lost. (Brunacini, 2002, p. 39)

There are two fundamental approaches to the assignment of an ISO. First, is the pre-designated, or standing assignment; in this scenario the ISO is assigned prior to the emergency

incident and responds in accordance with written policies and procedures or at the request of the incident commander. Second, is the on-scene assignment; in this approach, the incident commander assigns an ISO at the scene, from personnel on hand, on an as-needed basis. The preferred method is the standing assignment. The value of the standing assignment is the selection of the ISO based on qualifications, experience and a desire to fulfill the assignment (R.S. Fleming, 1996). Regardless, it is good planning to train all fire officers in the role and duties of the ISO (Rubin, 1995).

NFPA 1521 (2002a) lists the functions of the ISO in detail. An abbreviated summary of these functions is included in Appendix A. The ISO functions as a part of the incident commander's command staff and reports directly to the IC. The ISO manages the safety and health process at the incident scene. Key functions include monitoring the appropriate use of PPE, evaluation of the structure, vehicle, and operational environment, personnel accountability, establishment of rapid intervention teams, establishment of safety zones and establishment of the rehabilitation unit (Loflin, 1996). In addition to the above, the ISO initiates and facilitates the investigation of all accidents and injuries at the scene.

The evaluation of safety and operations at the emergency scene is a continuous process. The ISO is tasked with ongoing reconnaissance, risk assessment, resource assessment and reporting his/her findings and recommendations to the incident commander. The ISO identifies risks, evaluates each risk based on its frequency and severity, prioritizes risks accordingly, controls or mitigates risks, and continues the monitoring process with the goal to identify new risks as they develop (Dodson, 1999; Sachs, 2001).

The task of the ISO can be daunting. The use of a checklist can aid the ISO in dealing with the many priorities of his/her task and prevent "bunker cop" syndrome; the tendency to

focus on the familiar and obvious. A checklist can break down the duties and responsibilities of the ISO and serve as a reminder to look at the big picture and remain proactive (Sachs, 2001; Dodson, 1999; Martinek, 1995). However, the checklist should not become a substitute for surveying the scene, applying common sense and experience (Loflin, 1996).

**Research Question #3: What are the key functions and responsibilities of a fire service incident safety officer as related to specific types of incidents?**

The answer to this research question is that the key functions and responsibilities of the incident safety officer do not change with different type incidents. The ISO at a fire, hazardous materials operation, or technical rescue is still charged with the management of safety and health at the emergency scene. He/she still accomplishes this task under the direction of the incident commander through reconnaissance and the management of risks and hazards found in surveying the scene of the incident. However, technical expertise is certainly helpful during incidents of a specialized nature. NFPA 1521 (2002a) mandates the technical expertise of the safety officer at hazardous materials and special operation incidents. This is why experience is considered a necessary attribute of the successful incident safety officer (Rubin, Maniscalco & Christen, 1999). An experienced fire officer will recognize the need to work with technical experts when he/she is beyond his/her level of expertise at an incident. Experience also contributes to the recognition of the special concerns associated with specific types of incidents. The standing ISO will probably not be an expert in every possible fire service operation. Therefore, it is important that he/she recognize the need to assign assistants with the requisite expertise when required (NFPA, 2002a).

In many cases it will take time to gather personnel with the required technical expertise to the scene. This is when the checklist becomes a valuable tool to aid the ISO in addressing the

particular safety concerns associated with a special operation (McGary, 1999). Special operations generally differ from standard fire operations in their longer duration, extended time to plan and prepare tactics, the need for specialized PPE, the need for technical experts, and the tendency for complacency in regard to safety as the incident protracts (Sachs, 2001). Some of the special safety concerns involved in Haz Mat incidents include the nature and size of the problem (leak, spill etc.), the particular hazards of the product involved, evacuation needs, the need for PPE that protects personnel to the level exposure to the product demands, the need to establish "hot" and "warm" zones of control, and the need for technical know-how in the containment and clean-up of the product involved. For technical rescue, issues such as the kind of rescue (confined space, trench, high-angle, water etc.), appropriate PPE, atmospheric monitoring, backup teams, shoring/cribbing, ropes and rigging, lock-out/tag-out, and entry control are all factors to be considered by the safety officer. In any type of rescue situation, the primary safety consideration is whether the operation is a rescue or body recovery. Obviously, in terms of risk/benefit analysis, a recovery operation should not put personnel at a safety risk (Martinek, 1995; McGary, 1999; Smith, 2002; Bevelacqua & Stilp, 1998; Rubin, Maniscalco & Christen, 2000; Sachs, 2001; Dodson, 1999; Stowell, Brakhage & Smith, 2001).

Special operations such as hazardous materials and technical rescue incidents, in addition to large or complex fire operations are examples of situations when the establishment of a Safety Section could be valuable. The need for technical experts to work with the ISO, the frequent long duration and complexity of such incidents makes them suited for multiple ISOs functioning under a Safety Section Chief (Morris, 2001a).

**Research Question #4: What are the expectations of the Englewood Fire Division for the Safety Officer assignment?**

In the Englewood Fire Division, the health and safety officer (HSO) functions (as defined by NFPA 1521) are currently divided between three administrative chief officers, the Training Services Chief, the EMS Services Chief and the Technical Services Chief. The Training Services Chief functions as the chairperson for the Fire Division Safety Incident Review Team (SIRT), serves as the standing ISO-available to respond to emergency incidents as requested, oversees the Division physical fitness program and develops and coordinates the safety training for all members of the Fire Division. The SIRT functions as both the accident/injury review committee and the occupational safety and health committee for the Fire Division. The committee meets monthly, reviews accident/injury/damage reports, determines the preventability of the incidents described in those reports, and makes recommendations regarding the prevention and mitigation of future accidents, injuries and damage. In addition, the committee discusses, receives, and makes recommendations concerning at-large issues regarding occupational safety and health for the Fire Division. The Training Services Chief is considered the Fire Division Incident Safety Officer.

The EMS Services Chief oversees the health maintenance effort of the Fire Division. The EMS Services Chief maintains liaison with the Fire Division Physician. His duties currently include the scheduling and facilitation of annual physicals for all Division members, consultation with the Division Physician in the oversight of long-term injured/ill members and light/limited duty personnel, and infection control. The EMS Services Chief is a recent addition to the membership of the SIRT.

The Technical Services Chief is responsible for the purchase, maintenance, and evaluation of all facilities, equipment, clothing and apparatus assigned to the Fire Division. In this capacity, he is responsible to coordinate the establishment of specifications for equipment, clothing and apparatus, to perform annual inspections of PPE, apparatus and facilities. The Technical Services Chief is also responsible to maintain records related to the maintenance and testing of all equipment, protective gear, apparatus and facilities. The Technical Services Chief has recently been added to the membership of the SIRT to provide the committee with input and updates on equipment specifications, purchases and maintenance issues related to safety.

In the job duties of the three administrative chiefs outlined above, the Englewood Fire Division has addressed the majority of the provisions of NFPA 1521 (2002a). Where the Division has failed is in the development of detailed and specific direction for each of these areas, especially towards the relationship of each to the Division's occupational health and safety effort. The division of the duties of the health and safety officer has not, as yet, proven a hindrance to the Fire Division's health and safety efforts. However, it is generally recommended that the duties described above be divided only in relation to the non-emergent and emergent safety efforts of a fire organization (NFPA, 2002a; Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001; Loflin, 1996).

The Fire Division's expectations are to be successful in each of the areas described above in support of the safety and health of all Division members. Greater success may be achieved through the development of the job description and operational guidelines that are the goal of this research paper. Additionally, the assignment of one individual to oversee either both the non-emergent and emergent aspects of the Division's occupational health and safety efforts, or the division of responsibility along administrative and emergency response lines, could provide a

greater level of consistency and cohesiveness to the over-all program and improve its success. The individuals that currently share responsibility for various aspects of the program could continue to provide the Safety Officer with assistance in their areas of expertise. However, the overall responsibility for directing and ensuring the achievement of Fire Division goals related to occupational health and safety should belong to one individual in the administrative arena.

**Research Question #5: What should the qualifications, role and responsibilities of the Englewood Fire Division Safety Officer be?**

This research question is answered in the action research elements of the project. A recommended job description for the Englewood Fire Division Health and Safety Officer is located in Appendix B. The recommended job description summarizes the position, reporting relationships, qualifications, authority, duties and responsibilities (in both the administrative and emergency response contexts), preparation and training, required knowledge, skills and abilities, and a section for approvals according to City of Englewood policy. The job description was developed from the information gathered in the evaluative research, and follows closely the NFPA guidelines for the safety officer role in the fire service (NFPA, 2002a).

A recommended operational guideline for the response and functions of the incident safety officer was also developed based on the evaluative research. This guideline is located in Appendix C. The operational guideline includes a statement on its purpose, its scope, and the policy itself. The policy includes some helpful definitions, a statement on the ISO assignment, the response parameters of the standing ISO, a guideline on the delegation of the ISO responsibilities in the absence of the standing ISO, a guideline on the establishment of a Safety Section, a description of the ISO's on scene functions, and some attached checklists.

## DISCUSSION

This research project established the need for a safety officer position in the Englewood Fire Division (EFD). The consistent rate of firefighter deaths and injuries over a protracted timeframe, and the number of safety deviations those deaths and injuries portend, substantiates the position of safety officer for the fire service in general (Sachs, 2001; Dodson, 1999; Dunn, 1992; Rubin; 1995). It is no longer acceptable to ignore the safety hazards and risks the firefighting profession is faced with (McGill, 1996). For legal, ethical and economic reasons, the fire service (e.g. the EFD) must take a proactive stance on firefighter occupational health and safety (Stowell, Brakhage & Smith, 2001; McGill, 1996). The Fire Division must encourage a "culture of safety" (Russell, 2002, p. 27; Daniels, 2001, p. 32). This involves the allocation of both material and human resources to the Division's safety program and the development of safety awareness on the part of all members.

The EFD must address both the administrative management of its health and safety programs and the need for an incident safety officer to manage emergency scene safety concerns (NFPA, 2002a; 2002b; Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001). The two roles may be fulfilled by one individual, or divided between two individuals (Loflin, 1996; Dodson, 1999; Sachs 2001). There remains no excuse for the Fire Division not to have a well-defined job description and operational guideline for the role of safety officer. There are numerous resources that describe the qualifications, role, responsibilities and functions of both the health and safety officer and the incident safety officer (NFPA, 2002a; 2002b; Dodson, 1999; Sachs, 2001; Stowell, Brakhage & Smith, 2001; Rubin, 1996; R.S. Fleming, 1996).

The current practice of the EFD is to assign the Training Services Chief to the role of the safety officer. This corroborates the recommendation that the safety officer be an experienced

fire officer with “horsepower” in the enforcement of the safety culture in both emergency and non-emergency settings (McGary, 1999; Rubin, 1995; Rubin, Maniscalco & Christen, 1999). The clear definition and communication of the role of the safety officer is a necessity if conflict and ambiguity are to be avoided (R.S. Fleming, 1996). The EFD safety officer role has never been clearly defined by a job description or operational guidelines. Whereas the need for a safety officer in the fire organization is well established, and since the role and responsibilities of the fire organization safety officer has been widely addressed in both fire service literature and standards, a job description and operational guidelines for the EFD safety officer must be established to ensure the success of the Division’s occupational health and safety efforts.

## RECOMMENDATIONS

In order to address the established need for an EFD safety officer, and to clearly define the position’s qualifications, role, responsibilities and functions, the author recommends the adoption of the proposed job description (Appendix B). The job description addresses the administration of the EFD’s occupational health and safety programs as well as the management of the occupational health and safety issues related to emergency response. NFPA 1521, *Standard for Fire Department Safety Officer*, 2002 ed., along with numerous other fire service books and articles were employed in the development of the recommended job description.

Additionally, it is recommended that the EFD adopt the proposed operational guidelines establishing the role, response parameters and functions of the EFD incident safety officer (Appendix C). Included with this policy are three proposed safety officer checklists that will assist the incident safety officer in the performance of his/her functions at various types of

incidents. NFPA 1521 and numerous other fire service resources were utilized in the development of the proposed operational guidelines and checklists.

It is further recommended that the EFD assign a single Safety Officer from among the three staff Chiefs that currently share the responsibilities outlined in the proposed job description. This individual should assume the oversight of all areas of the occupational health and safety program. The intention is not to transfer the entire workload of the various elements of the program to one Chief, but rather to give him/her the responsibility to manage the overall program. The various aspects of the program that are currently managed by the other chiefs could still be delegated to these officers in many cases in assistance to, and under the guidance of, the designated Safety Officer.

A future recommendation for the EFD, and for readers of this research project, is the development and implementation of a comprehensive written formal risk management plan as outlined in Chapter 4 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program* (2002c). The written risk management plan provides for the identification of risks associated with all fire organization operations and establishes goals and objectives for their management. The Classic Risk Management Process as described by Dodson (1999) and Sachs (2001) should be employed in the management of the risks identified through this plan. The written risk management plan should provide the safety officer with a tool for the continuous assessment of the effectiveness of the occupational safety and health efforts of his/her organization.

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# APPENDIX A

# Functions of the HSO and ISO

The following is an abbreviated summary of the functions of the HSO and ISO as described in NFPA 1521, Standard for Fire Department Safety Officer (2002).

The functions of the HSO include:

Risk Management-

1. The development, implementation and management of an official risk management plan, as outlined by NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*.
2. The publication, dissemination, communication, monitoring and annual revision of the official risk management plan to ensure firefighter heath and safety.
3. The development and implementation into the department's IMS procedures of an incident risk management plan as specified by NFPA 1500.

Laws, Codes and Standards-

1. The development, review, and revision of all department rules, regulations and standard operating procedures (SOPs) that apply to department occupational health and safety.
2. The development of procedures to ensure compliance with applicable laws, codes and standards that apply to occupational health and safety.
3. The submission of all developed rules, regulations and SOPs to the fire chief or his/her designated representative.
4. The submission of a periodic report to the fire chief or his/her designated representative concerning the adequacy and effectiveness of, and compliance with, department rules, regulations and SOPs related to occupational health and safety.

5. Enforcement of the occupational health and safety rules, regulations and SOPs in a manner approved by the fire chief.

Training and Education-

1. Ensures that training in safety procedures related to all fire department operations and functions is provided to all fire department members.
2. Provides training based on the investigation of accidents, injuries, occupational deaths, illnesses, exposures, and the observation of incident scene activities.
3. Ensures that safety supervision is provided for all training activities, including all live burn exercises as outlined in NFPA 1403, *Standard on Live Fire Training Evolutions*. Personally aids in, or provides for experienced assistance in, the pre-burn inspections of any structures to be used for live fire training.
4. Develops and distributes information designed to educate department members in health and safety.

Accident Prevention-

1. Manages or delegates the management of a department accident prevention program.
2. Provides instruction in safe work practices in emergency and non-emergency activities for all department personnel.
3. Provides for the training and testing of all department drivers and apparatus driver/operators.
4. Periodically surveys all fire department operations, procedures, equipment and facilities for safety related concerns and forwards any recommendations to the fire chief or his/her designated representative.

Accident Investigation, Procedures, and Review-

1. Ensures that any department member suffering a life threatening occupational injury or illness is provided immediate emergency medical care and transport to an appropriate medical facility.
2. Ensures that all occupational injuries and illnesses are treated at the most appropriate medical facility.
3. Personally investigates or causes to be investigated all occupational injuries, illnesses, exposures, fatalities or other potentially hazardous conditions related to fire department members, as well as all accidents or damage involving fire department vehicles, apparatus, equipment or facilities.
4. Develops corrective recommendations from the investigation of accidents and submits these to the fire chief or his/her designated representative.
5. Develops and periodically reviews and revises accident/injury reporting and investigation procedures and ensures these are in compliance with applicable local, state and federal requirements.
6. Reviews the operations and procedures employed at any unusually hazardous incident. When it is determined that incorrect or questionable procedures were utilized, submits corrective recommendations to the fire chief or his/her designated representative.

Records Management and Data Analysis-

1. Maintains and manages the collection and analysis of records related to all accidents, occupational deaths, injuries, illnesses and exposures as outlined in NFPA 1500.

2. Identifies and analyzes safety and health hazards and develops corrective actions to mitigate these hazards.
3. Ensures that records are maintained on the following, as specified in NFPA 1500:
    a. Fire department safety and health SOPs
    b. Periodic inspection and service testing of apparatus and equipment
    c. Periodic inspection and service testing of personal safety equipment
    d. Periodic inspection of fire department facilities
4. Maintains records of all recommendations and actions taken to implement corrective measures addressing safety and health hazards or unsafe practices.
5. Maintains records of all measures taken to implement safety and health procedures and accident prevention methods.
6. Issues an annual (minimum) report to the fire chief on fire department accidents, occupational injuries, illnesses, deaths and exposures.

Apparatus and Equipment-

1. Reviews specifications for new apparatus, equipment, protective clothing and protective equipment to ensure compliance with all applicable safety standards as outlined inn NFPA 1500.
2. Makes recommendations and assists with the evaluation, acceptance and approval of new equipment as outlined by NFPA 1500.
3. Makes recommendations and assists with the service testing of apparatus and equipment in relation to its suitability for continued service as outlined in NFPA 1500.

4. Develops, implements and maintains a protective clothing and protective equipment program that meets the requirements of NFPA 1500.
5. Provides for the periodic inspection and evaluation of all protective clothing and equipment to determine its suitability for continued service.

Facility Inspection-

1. Ensures that all fire department facilities are inspected as outlined in NFPA 1500, and ensures that all safety issues, health hazards and code violations are corrected in a prompt and timely manner.
2. Health Maintenance-
3. Ensures the fire department's compliance with the provisions of Chapter 10 of NFPA 1500.
4. Incorporates medical surveillance, wellness programs, physical fitness, nutrition, and injury/illness rehabilitation into the health maintenance program.

Liaison-

1. Serves as a member of the fire department occupational safety and health committee.
2. Reports the recommendations of the fire department occupational safety and health committee to the fire chief or his/her designated representative.
3. Submits recommendations pertaining to occupational safety and health to the fire chief or his/her designated representative.
4. Provides information and assistance to officers and firefighters for surveying their districts, in order to help them identify and report safety and health hazards that could have adverse effects on fire department operations.

5. Maintains liaison with staff officers concerning recommended changes in equipment, procedures and recommended methods to eliminate unsafe practices and reduce existing hazardous conditions.
6. Maintains liaison with equipment manufacturers, standards making organizations, regulatory agencies and safety specialists outside the fire service regarding changes to equipment procedures and methods to eliminate unsafe practices and reduce hazardous conditions.
7. Maintains liaison with the fire department physician to ensure that needed medical advice and treatment is available to all members.

Occupational Safety and Health Committee-

1. Ensures the establishment of the fire department occupational safety and health committee.
2. Ensures the occupational safety and health committee's compliance with NFPA 1500.

Infection Control-

1. Ensures that the fire department's infection control program is in compliance with 29 CFR 1910.1030, *Occupational Exposure to Bloodborne Pathogens* and NFPA 1581, *Standard on Fire Department Infection Control Program*.
2. Maintains liaison with the fire department infection control officer(s) to assist in achieving the objectives of the infection control program as outlined in NFPA 1581.
3. Serves as the infection control officer if an infection control officer position does not exist in the fire department.

Critical Incident Stress Management-

1. Ensures the establishment of a critical incident stress management (CISM) program for the fire department that meets the provisions of NFPA 1500, Chapter 12.
2. Ensures the incorporation of the CISM program into the fire department's member assistance program.

Post-incident Analysis-

1. Develops procedures to ensure that safety and health issues are addressed during post incident analysis.
2. Provides a written report that includes pertinent information about the incident related to safety and health concerns.
3. In the above report, includes information and input from the ISO including the incident action plan (IAP) and the ISO's incident safety plan.
4. In the above report, includes information related to issues concerning the use of protective clothing and equipment, personnel accountability system, rehabilitation operations and any other impacting the safety and welfare of personnel at the scene. (NFPA 1521, 2002)

The Functions of the ISO are:

Incident Management System-

1. The ISO is integrated into the IMS system as a member of the command staff as defined by NFPA 1561, *Standard on Emergency Services Incident Management System*.

2. SOPs are to be established defining the criteria for the response and/or appointment of the ISO.
3. ISOs designated by the IC will be integrated into the IMS system command staff as per NFPA 1561.
4. The ISO and his/her assistants will be readily identifiable on the scene.

Incident Scene Safety-

1. The ISO monitors conditions, activities and operations to assure these follow the criteria established in the fire department's risk management plan. The ISO takes appropriate action when risks fall outside established criteria.
2. The ISO ensures the establishment of an incident scene rehabilitation tactical level management unit through the IC.
3. The ISO monitors the scene and reports to the IC the status of conditions, hazards, and risks.
4. The ISO ensures that the fire department's personnel accountability system is in operation.
5. The IC will provide the ISO with the IAP. The ISO will assess the IAP for risk and report his/her recommendations to the IC.
6. The ISO will ensure the communication of established safety zones, collapse zones, hot zone and other designated hazard areas to all personnel on scene.
7. The ISO will assess motor vehicle traffic scene hazards and apparatus placement and take appropriate action to mitigate hazards.
8. The ISO will monitor scene radio traffic and be alert to factors that could result in missed, unclear or incomplete communications.

9. The ISO will request assistant safety officers based on the size, complexity or duration of the incident.
10. The ISO will survey and assess the hazards accompanying the landing of helicopters at the scene and liaison with the helicopters.

Fire Suppression-

1. During fire operations the ISO will fulfill all the functions outlined under Incident Scene Safety.
2. The ISO will ensure the establishment and readiness of a rapid intervention crew as outlined in NFPA 1500.
3. In structure fire situations, the ISO will advise the IC concerning hazards, collapse potential and fire extension associated with the structure.
4. The ISO monitors smoke, fire conditions and advises the IC, division, sector, group and company officers on the potential for flashover, backdraft, blow-up, or other events posing a threat to on-scene personnel.
5. The ISO monitors access of entry and egress to structures and any associated safety hazards to interior operations.

Emergency Medical Service (EMS) Operations-

1. During EMS operations the ISO will fulfill all the functions outlined under Incident Scene Safety.
2. The ISO will ensure compliance with the department's infection control plan as outlined by NFPA 1581, *Standard on Fire Department Infection Control Program*.

3. The ISO ensures the establishment of scene rehabilitation and critical incident stress management as required by the nature and duration of the incident, and especially at mass casualty incidents.

Hazardous Materials Operations-

1. During hazardous materials operations the ISO will fulfill all the functions outlined under Incident Scene Safety.
2. The hazardous materials ISO will meet the provisions of NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*.
3. The ISO will attend strategic and tactical planning sessions and give input on risk assessment and the safety of personnel.
4. The ISO will ensure that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
5. The ISO will ensure the clear marking of hot, warm, decontamination and other control zones and communication of these to all personnel on scene.
6. The ISO will meet with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

Special Operations-

1. During special operations the ISO will fulfill all the functions outlined under Incident Scene Safety. The individual assigned as the ISO for special operations will have appropriate education, training and experience in special operations.
2. The ISO will attend strategic and tactical planning sessions and give input on risk assessment and the safety of personnel.

3. The ISO will ensure that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
4. The ISO will meet with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

Accident Investigation and Review-

1. When notified of an injury, illness or exposure to on scene personnel, the ISO will immediately notify the IC to ensure that appropriate medical care is provided.
2. The ISO will initiate the accident investigation process as defined by the procedures of the fire department.
3. In the event of a serious injury, fatality or other potentially harmful event, the ISO will request the aid of the HSO.

Post-incident Analysis-

1. The ISO will prepare a written report containing pertinent information concerning incident related safety and health issues for the post-incident analysis, and will participate in the post-incident analysis.
2. The ISO report will include information related to personal protective clothing and equipment use, the personnel accountability system, rapid intervention crews, rehabilitation operations and any other concerns impacting the safety and welfare of personnel operating at the scene.

# APPENDIX B

# Proposed Job Description for the Englewood Fire Division Safety Officer

# CITY OF ENGLEWOOD
# POSITION DESCRIPTION

| | | | |
|---|---|---|---|
| POSITION TITLE: | **Health and Safety Officer** | | |
| DEPARTMENT: | **Safety Services** | DIVISION: | **Fire** |
| DATE EFFECTIVE: | **October 2003** | DATE REVIEWED: | |
| FLSA CLASSIFICATION: | **Exempt** | CLASS/COMP PLAN: | |
| WC CODE: | | EEO CODE: | |

## I. POSITION SUMMARY

The Health and Safety Officer (HSO) is assigned by the Director of Safety Services or his/her designee. The HSO manages the Fire Division's occupational safety and health program. The HSO is available for call back to emergency incidents to perform the duties of the Incident Safety Officer (ISO) as required.

## II. REPORTING RELATIONSHIPS

Reports to: Fire Division Chief

Direct Reports: None

## III. QUALIFICATIONS

a. The HSO will be a fire officer with not less than five (5) years experience at the officer level. Generally, the Training Services Chief will be assigned to the HSO function. Assistants to the HSO will be a minimum of the rank of Fire Lieutenant.
b. The HSO is to be conversant in the laws, codes and standards regulating occupational safety and health in the fire service.
c. The HSO will have a working knowledge of the occupational health and safety hazards associated with emergency scene operations.
d. The HSO will seek annual training on and maintain a high level of expertise in the principles and techniques of safety management.
e. The HSO will be conversant in the issues of health maintenance and physical fitness affecting fire service employees.

## IV. AUTHORITY

a. The HSO will have the responsibility to identify health and safety hazards and to facilitate their correction.

b. The HSO will have the authority to immediately cause correction of situations that create an imminent hazard to Fire Division personnel.
c. The HSO will address non-imminent hazards through the development of policies, procedures and appropriate training. In circumstances where the HSO does not have direct authority to correct non-imminent hazards the HSO has the authority to bring non-imminent hazards and safety concerns to the attention of such persons having the authority to cause correction.

## V. DUTIES AND RESPONSIBILITIES

The listed examples of work follow closely those outlined by NFPA 1521, *Standard for Fire Department Safety Officer*, 2002 edition. While detailed, these examples are not intended to be all-inclusive. They may be modified with additions, deletions, or changes as necessary.

**Administrative Duties and Responsibilities:**

*Risk Management-*

1. Develops, implements and manages the Fire Division Risk Management Plan.
2. Publishes, distributes and monitors the Fire Division Risk Management Plan. Reviews the Fire Division Risk Management Plan on an annual basis and revises as necessary to ensure firefighter heath and safety.
3. Develops and incorporates into the Fire Division IMS procedures an incident risk management plan.

*Laws, Codes and Standards-*

1. Develops, reviews, and revises all Fire Division rules, regulations and standard operating procedures (SOPs) that apply to department occupational health and safety.
2. Develops procedures to ensure compliance with applicable laws, codes and standards that apply to occupational health and safety.
3. Submits all developed rules, regulations and SOPs to the Director of Safety Services or his/her designated representative for approval.
4. Submits an annual report to the Director of Safety Services or his/her designated representative concerning the adequacy and effectiveness of, and compliance with, Fire Division rules, regulations and SOPs related to occupational health and safety.
5. Enforces the occupational health and safety rules, regulations and SOPs in a manner approved by the Director of Safety Services.

*Training and Education-*

1. Ensures that training in safety procedures related to all Fire Division operations and functions is provided to all personnel.
2. Provides training based on the investigation of accidents, injuries, occupational deaths, illnesses, exposures, and the observation of incident scene activities.

3. Ensures that safety supervision is provided for all training activities, including all live burn exercises as outlined in NFPA 1403, *Standard on Live Fire Training Evolutions*. Personally aids in, or provides for experienced assistance in, the pre-burn inspections of any structures to be used for live fire training.
4. Develops and distributes information designed to educate Fire Division personnel in health and safety.

*Accident Prevention-*

1. Manages or delegates the management of a department accident prevention program.
2. Provides for instruction in safe work practices in emergency and non-emergency activities for all Fire Division personnel.
3. Provides for the training and testing of all Fire Division driver/operator/engineers (DOEs).
4. Periodically surveys all Fire Division operations, procedures, equipment and facilities for safety related concerns and forwards any recommendations to the Director of Safety Services or his/her designated representative.

*Accident Investigation, Procedures, and Review-*

1. Ensures that any Fire Division member suffering a life threatening occupational injury or illness is provided immediate emergency medical care and transport to an appropriate medical facility.
2. Ensures that all occupational injuries and illnesses are treated at the most appropriate medical facility.
3. Personally investigates or causes to be investigated all occupational injuries, illnesses, exposures, fatalities or other potentially hazardous conditions related to Fire Division members, as well as all accidents or damage involving Fire Division vehicles, apparatus, equipment or facilities.
4. In consultation with the Fire Division Safety Incident Review Team (SIRT), develops corrective recommendations based on the investigation of accidents and submits these to the Director of Safety Services or his/her designated representative.
5. Develops and periodically reviews and revises accident/injury reporting and investigation procedures and ensures these are in compliance with applicable local, state and federal requirements.
6. Reviews the operations and procedures employed at any unusually hazardous incident. When it is determined that incorrect or questionable procedures were utilized, submits corrective recommendations to the Director of Safety Services or his/her designated representative.

*Records Management and Data Analysis-*

1. Maintains and manages the collection and analysis of records related to all accidents, occupational deaths, injuries, illnesses and exposures.
2. Identifies and analyzes safety and health hazards and develops corrective actions to mitigate these hazards.
3. Ensures that records are maintained on the following:

a. Fire Division safety and health SOPs
b. Periodic inspection and service testing of apparatus and equipment
c. Periodic inspection and service testing of personal safety equipment
d. Periodic inspection of fire department facilities

4. Maintains records of all recommendations and actions taken to implement corrective measures addressing safety and health hazards or unsafe practices.
5. Maintains records of all measures taken to implement safety and health procedures and accident prevention methods.
6. Issues an annual (minimum) report to the Director of Safety Services on Fire Division accidents, occupational injuries, illnesses, deaths and exposures.

*Apparatus and Equipment-*

1. Reviews specifications for new apparatus, equipment, protective clothing and protective equipment to ensure compliance with all applicable safety standards.
2. Makes recommendations and assists with the evaluation, acceptance and approval of new equipment.
3. Makes recommendations and assists with the service testing of apparatus and equipment in relation to its suitability for continued service.
4. Develops, implements and maintains a protective clothing and protective equipment program that meets the requirements of NFPA 1500.
5. Provides for the periodic inspection and evaluation of all protective clothing and equipment to determine its suitability for continued service.

*Facility Inspection-*

1. Ensures that all Fire Division facilities are inspected annually for compliance with legally applicable health, safety building and fire code requirements.
2. Ensures that all Fire Division facilities are inspected monthly to identify and provide correction of any safety or health hazards.
3. Ensures that all facility safety issues, health hazards and code violations are corrected in a prompt and timely manner.

*Health Maintenance-*

1. Ensures the Fire Division's efforts to comply with the provisions of Chapter 10 of NFPA 1500: *Medical and Physical Requirements*.
2. Works to incorporate medical surveillance, wellness programs, physical fitness, nutrition, and injury/illness rehabilitation into the health maintenance program.

*Liaison-*

1. Serves as Chairperson of Fire Division Safety Incident Review Team (SIRT).
2. Reports the recommendations of the SIRT to the Director of Safety Services or his/her designated representative.
3. Submits recommendations pertaining to occupational safety and health to the Director of Safety Services or his/her designated representative.
4. Provides information and assistance to officers and firefighters for surveying their districts, in order to help them identify and report safety and health hazards that could have adverse effects on Fire Division operations.

5. Maintains liaison with staff officers concerning recommended changes in equipment, procedures and recommended methods to eliminate unsafe practices and reduce existing hazardous conditions.
6. Maintains liaison with equipment manufacturers, standards making organizations, regulatory agencies and safety specialists outside the fire service regarding changes to equipment procedures and methods to eliminate unsafe practices and reduce hazardous conditions.
7. Maintains liaison with the Fire Division physician to ensure that needed medical advice and treatment is available to all members.

*Occupational Safety and Health Committee-*

1. Chairs the Safety Incident Review Team (SIRT), which serves as both the Fire Division accident/injury review committee and as the occupational safety and health committee.
2. Ensures the SIRT's compliance with NFPA 1500.

*Infection Control-*

1. Ensures that the Fire Division's infection control program is in compliance with 29 CFR 1910.1030, *Occupational Exposure to Bloodborne Pathogens* and NFPA 1581, *Standard on Fire Department Infection Control Program*.
2. Maintains liaison with the Fire Division infection control officer(s) to assist in achieving the objectives of the infection control program as outlined in NFPA 1581.
3. Serves as the acting infection control officer in the absence of the infection control officer.

*Critical Incident Stress Management-*

1. Ensures the availability of a critical incident stress management (CISM) program for the Fire Division.
2. Ensures the integration of the CISM program into the Fire Division's employee assistance program (EAP).

*Post-incident Analysis-*

1. Develops procedures to ensure that safety and health issues are addressed during post incident analysis.
2. Provides a written report that includes pertinent information about the incident related to safety and health concerns.
3. In the above report, includes information and input from the ISO (if the ISO is an officer other than the HSO) including the incident action plan (IAP) and the ISO's incident safety plan.
4. In the above report, includes information related to issues concerning the use of protective clothing and equipment, personnel accountability system, rehabilitation operations and any other impacting the safety and welfare of personnel at the scene.

**Emergency Scene Duties and Responsibilities:**

*Incident Management System-*

1. When the HSO serves as the incident safety officer (ISO), he/she will be integrated into the IMS system as a member of the command staff as defined by NFPA 1561, *Standard on Emergency Services Incident Management System*.
2. The SOP defining the criteria for the response and/or appointment of the ISO will be followed.
3. ISOs appointed or designated by the IC will be integrated into the IMS system command staff as per NFPA 1561.
4. The ISO and his/her assistants will be readily identifiable on the scene.

*Incident Scene Safety-*

1. Monitors conditions, activities and operations to assure these follow the criteria established in the Fire Division's risk management plan. The ISO takes appropriate action when risks fall outside established criteria.
2. Ensures the establishment of an incident scene rehabilitation tactical level management unit through the IC.
3. Monitors the scene and reports to the IC the status of conditions, hazards, and risks.
4. Ensures that the Fire Division's personnel accountability system is in operation.
5. The IC will provide the ISO with the IAP. The ISO will assess the IAP for risk and report his/her recommendations to the IC.
6. Ensures the communication of established safety zones, collapse zones, hot zone and other designated hazard areas to all personnel on scene.
7. Assesses motor vehicle traffic scene hazards and apparatus placement and takes appropriate action to mitigate hazards.
8. Monitors scene radio traffic and is alert to factors that could result in missed, unclear or incomplete communications.
9. Requests assistant safety officers based on the size, complexity or duration of the incident.
10. Surveys landing zones and assesses the hazards accompanying the landing of helicopters at the scene and communicates with the helicopter pilot to assist with landing and take-off.

*Fire Suppression-*

1. During fire operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
2. Ensures the establishment and readiness of a rapid intervention crew as outlined in NFPA 1500.
3. In structure fire situations, the ISO will advise the IC concerning hazards, collapse potential and fire extension associated with the structure.
4. Monitors smoke, fire conditions and advises the IC, division, sector, group and company officers on the potential for flashover, backdraft, blow-up, or other events posing a threat to on-scene personnel.

5. Monitors access of entry and egress to structures and any associated safety hazards to interior operations.

*Emergency Medical Service (EMS) Operations-*

1. During EMS operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
2. Ensures compliance with the Fire Division's infection control plan.
3. Ensures the establishment of scene rehabilitation and critical incident stress management as required by the nature and duration of the incident, and especially at mass casualty incidents.

*Hazardous Materials Operations-*

1. During hazardous materials operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
2. The hazardous materials ISO will meet the provisions of NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*. If the ISO does not meet the criteria of NFPA 472, he/she will assign an assistant ISO with the appropriate qualifications to oversee the safety issues related to the hazardous materials component of the incident
3. Attends strategic and tactical planning sessions and provides input on risk assessment and the safety of personnel.
4. Ensures that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
5. Ensures the clear marking of hot, warm, decontamination and other control zones and communication of these to all personnel on scene.
6. Meets with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

*Special Operations-*

1. During special operations the ISO will fulfill all the functions outlined above under Incident Scene Safety. The individual assigned as the ISO for special operations will have appropriate education, training and experience in special operations.
2. Attends strategic and tactical planning sessions and provides input on risk assessment and the safety of personnel.
3. Ensures that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
4. Meets with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

*Accident Investigation and Review-*

1. When notified of an injury, illness or exposure to on scene personnel, the ISO will immediately notify the IC to ensure that appropriate medical care is provided.

2. Initiates the accident investigation process as defined by Fire Division procedures.
3. When the ISO is not the HSO, in the event of a serious injury, fatality or other potentially harmful event, the ISO will request the aid of the HSO.

*Post-incident Analysis-*

1. Prepares a written report containing pertinent information concerning incident related safety and health issues for the post-incident analysis, and participates in the post-incident analysis.
2. The ISO report will include information related to personal protective clothing and equipment use, the personnel accountability system, rapid intervention crews, rehabilitation operations and any other concerns impacting the safety and welfare of personnel operating at the scene.

**Other Duties & Responsibilities**

Performs other duties as assigned and required.

## IV. PREPARATION AND TRAINING

Recommended Minimum Education: Bachelor's degree in Fire Service Management, Public Administration or an associated field, or the equivalent experience and skill.

Work Experience: Minimum 5 years as a Fire Lieutenant or above, experience as an Incident Commander (IC) is highly recommended.

Certifications and/or Licensures: State of Colorado Fire Officer II certification is highly recommended.

Required Driver's License: Valid Colorado driver's license and a clear or acceptable MVR.

An equivalent combination of education, training and relevant job experience may be substituted.

## V. KNOWLEDGE, SKILLS, AND ABILITIES

**Knowledge**

Advanced knowledge of:

- Fire Science
- Fire service strategy and tactics
- The principles and techniques of safety management.
- Occupational health and safety hazards associated with emergency scene operations.
- Emergency medical practices
- Emergency preparedness and response
- Fire prevention
- Disaster management

- Incident Management System

Working knowledge of:

- Building construction
- Local, state and national laws, codes and standards pertaining to occupational health and safety in the fire service.
- The issues of health maintenance and physical fitness affecting fire service employees.
- Local, state, and national reporting principles and records management
- Educational methodologies, course development
- Microsoft Office

**Skills and Abilities**

A high level of skill in applying knowledge of emergency operations, incident management, building construction, fire behavior and health and safety hazards associated with emergency operations to forecast and mitigate probable risks and hazards on the emergency scene.

Basic computer skills needed to write reports, develop lesson plans, compile data and keep records associated with the occupational health and safety program, and use Fire Division Records Management Systems.

Strong verbal communication skills required to deliver directives, briefings, training, and other required oral presentations. Strong writing skills needed to generate written reports, lesson plans, briefings, safety policies and procedures.

A high level of interpersonal skills, including the ability to motivate, instruct, confer with and direct subordinate personnel in the avoidance of risks and hazards, and the ability to work as an effective member of the IMS team under a variety of adverse circumstances.

Strong analytical skills required to develop training and action plans to address both non-emergency and emergency safety concerns and issues.

Strong mechanical skills needed to use specialized tools, apparatus, and appliances. Also required to apply common and specialized mechanical practices.

Strong project management skills needed to develop, organize, and facilitate training and risk management programs.

Basic general management skills needed to develop and administer policies and procedures. Also needed for budget management.

Must be able to operate common and specialized vehicles.

Must be physically fit for duty, as determined by division physical fitness and medical standards.

## VI. POSITION DESCRIPTION APPROVALS

EMPLOYEE:_____DATE:_____

SUPER./MANAGER:_____DATE:_____

DEPT. DIRECTOR:_____DATE:_____

HUMAN RESOURCES:_____DATE:_____

# APPENDIX C

# Incident Safety Officer Response and Functions SOP

# EMERGENCY OPERATIONS

**CHAPTER 4**

## SUBJECT: INCIDENT SAFETY OFFICER (ISO) REPSONSE AND FUNCTIONS

### *I. PURPOSE*

To provide operational guidelines for the response of the designated incident safety officer (ISO) to the incident scene, and to describe his/her functions at the scene and within the incident management process.

### *II. SCOPE*

All Fire Division Personnel.

### *III. POLICY*

#### *A. Definitions:*

***Assistant Safety Officer:*** A member of the Fire Division assigned and authorized by the Director of Safety Services to assist the fire department health and safety officer or incident safety officer in the performance of his/her duties.

***Hazard:*** The potential for harm or damage to people, property, or the environment. Hazards include the characteristics of facilities, equipment systems, property, hardware, or other objects, and the actions and inactions of people that create such hazards.

***Imminent Hazard:*** An act or condition that is judged to present a danger to persons or property that is so urgent and severe that it requires immediate corrective or preventive action.

***Incident Action Plan (IAP):*** The objectives reflecting the overall incident strategy, tactics, risk management, and member safety that are developed by the incident commander. Incident action plans are updated throughout the incident.

***Incident Safety Officer (ISO):*** An individual appointed to respond to or assigned at an incident scene by the incident commander to perform the duties and responsibilities of the scene safety officer.

***Incident Safety Plan:*** The strategies and tactics developed by the incident safety officer (ISO) based upon the incident commander's incident action plan (IAP) and the type of incident encountered.

***Incident Scene Rehabilitation (Rehab):*** The tactical level management unit that provides for medical evaluation, treatment, monitoring, fluid and food replenishment, mental rest, and relief from climatic conditions of the incident.

***Risk:*** A measure of the probability and severity of adverse effects. These adverse effects result from an exposure to a hazard.

***Special Operations:*** Those emergency incidents to which the Fire Division responds that require specific and advanced training and specialized tools and equipment. Special operations include may include water rescue, extrication, hazardous materials, confined space entry, high-angle rescue, aircraft rescue and firefighting, and other operations requiring specialized knowledge and training.

### *B. Designated ISO:*

The Training Services Chief serves as the designated Fire Division Incident Safety Officer (ISO). As such, he/she is on call 24 hours/7days a week to respond in accordance with the provisions of this policy. In his/her absence or inability to respond the Fire Division Operations Chief shall designate an acting ISO to respond in his/her place.

### *C. Response:*

1. Automatic Response: The ISO will be automatically dispatched to the following incidents and situations:

    a) Commercial fires
    b) All multiple alarm incidents
    c) Firefighter down, missing, or injured
    d) Hazardous materials incidents requiring a team response
    e) Special operations such as technical rescue incidents (confined space entry, trench, high-angle or water rescue)
    f) Mass casualty incidents
    g) Accidents at an incident scene or incidents in which apparatus and/or equipment is damaged
    h) At the request of the incident commander

2. Suggested Response: It is strongly suggested that the incident commander request the response of the designated ISO for the following incidents and situations:

    a) All working structure fires
    b) Whenever the IC's span of control exceeds three
    c) Hazardous materials incidents requiring a full on-duty response
    d) Multi-vehicle multi-casualty accidents involving extended vehicle extrication
    e) Protracted rescue incidents
    f) Incidents involving the injury or death of any Safety Services personnel
    g) Multi-agency, multiple alarm, mutual or automatic aid responses

3. Delegation: When the designated or acting ISO is unavailable or has a delayed response, the incident commander will assign an incident safety officer to function in that capacity until relieved. The need for an experienced fire officer to fulfill this function cannot be overstressed. It is recommended that the incident commander fill the ISO position in order of priority as follows:

    a) On-duty administrative staff chief officer
    b) Mutual/automatic aid designated safety officer
    c) Mutual/automatic aid chief officer
    d) On-duty Captain
    e) On-duty Lieutenant

The importance of an experienced high-ranking officer to fill the role of the ISO mandates that as more experienced and qualified personnel arrive at the scene, the duties of ISO be passed to that individual and the individual being relieved become an assistant ISO if possible.

### *D. Establishing a Safety Section:*

The need, size, complexity or duration of an incident can necessitate the need for assistant incident safety officers. Incidents such as high-rise fires, hazardous materials incidents, and special operations may require additional assistance. In these instances, the ISO is to inform the incident commander of the need to establish a Safety Section. The safety section will be assigned its own radio frequency and enough radios to continue to monitor the fireground operations frequency. Under the direction of the ISO, assistant ISOs can be assigned to handle scene monitoring, action planning, risk management, interior safety at a high-rise incident, or operations safety at hazardous materials incidents or special operations, or serve as relief for the ISO during extended incident operations.

### *E. Functions:*

1. *Incident Management System-*
    a) The ISO will check in with the incident commander (IC) on his/her arrival at the incident scene. The ISO is assigned to the command staff of the IC and works under the IC's direction. The ISO and his/her assistants will be readily identifiable on the scene through the use of a vest, helmet or both designating their role.
    **b) The ISO has the authority on the incident scene to alter, suspend or terminate any activity that is deemed to be unsafe or presents an *imminent hazard* to the lives or safety of emergency personnel.**
    **c) The ISO must *immediately* report any activity that is altered, suspended or terminated for safety reasons to the IC.**
    d) The ISO may also address any operations, conditions or hazards that pose anon-imminent hazard to the lives and/or safety of emergency personnel operating at an incident through consultation with the IC.
    e) When due to the size, nature or complexity of the incident the ISO is assigned assistant ISO personnel, these personnel are invested with the same authority to address imminent and non-imminent hazards at the emergency scene.

2. *Incident Scene Safety-*
    a) Monitors conditions, activities and operations to assure these follow the criteria established in the Fire Division's risk management plan. The ISO takes appropriate action when risks fall outside established criteria.
    b) Ensures the establishment of an incident scene rehabilitation tactical level management unit through the IC.
    c) Monitors the scene and reports to the IC the status of conditions, hazards, and risks.
    d) Ensures that the Fire Division's personnel accountability system is in operation.
    e) The IC will provide the ISO with the IAP. The ISO will assess the IAP for risk and report his/her recommendations to the IC.
    f) Ensures the communication of established safety zones, collapse zones, hot zone and other designated hazard areas to all personnel on scene.

g) Assesses motor vehicle traffic scene hazards and apparatus placement and takes appropriate action to mitigate hazards.
h) Monitors scene radio traffic and is alert to factors that could result in missed, unclear or incomplete communications.
i) Requests the establishment of the Safety Section as outlined above when the size, complexity or duration of the incident indicate the need.
j) Surveys landing zones and assesses the hazards accompanying the landing of helicopters at the scene and communicates with the helicopter pilot to assist with landing and take-off.

3. *Fire Suppression-*
   a) During fire operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
   b) Ensures the establishment and readiness of a rapid intervention crew as outlined by the Fire Operations Manual.
   c) In structure fire situations, the ISO will advise the IC concerning hazards, collapse potential and fire extension associated with the structure.
   d) Monitors smoke, fire conditions and advises the IC, division, sector, group and company officers on the potential for flashover, backdraft, blow-up, or other events posing a threat to on-scene personnel.
   e) Monitors access of entry and egress to structures and any associated safety hazards to interior operations.

4. *Emergency Medical Service (EMS) Operations-*
   a) During EMS operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
   b) Ensures compliance with the Fire Division's infection control plan as defined in the Fire Division Operations Manual.
   c) Ensures the establishment of scene rehabilitation and critical incident stress management as required by the nature and duration of the incident, and especially at mass casualty incidents.

5. *Hazardous Materials Operations-*
   a) During hazardous materials operations the ISO will fulfill all the functions outlined above under Incident Scene Safety.
   b) The hazardous materials ISO will meet the provisions of NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*. **If the ISO does not meet the criteria of NFPA 472, he/she will assign an assistant ISO with the appropriate qualifications to oversee the safety issues related to the hazardous materials component of the incident.**
   c) Attends strategic and tactical planning sessions and provides input on risk assessment and the safety of personnel.
   d) Ensures that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
   e) Ensures the clear marking of hot, warm, decontamination and other control zones and communication of these to all personnel on scene.
   f) Meets with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

6. *Special Operations-*
    a) During special operations the ISO will fulfill all the functions outlined above under Incident Scene Safety. The individual assigned as the ISO for special operations will have the appropriate education, training and experience in special operations. **If the ISO does not possess the requisite expertise in the special operation discipline, he/she will assign an assistant ISO with the appropriate qualifications to oversee the safety issues related to the special operation component of the incident.**
    b) Attends strategic and tactical planning sessions and provides input on risk assessment and the safety of personnel.
    c) Ensures that a safety briefing, to include the IAP and the incident safety plan, is developed and distributed to all personnel on scene.
    d) Meets with the IC to determine rehabilitation, accountability, or rapid intervention needs. For incidents of long duration, the ISO will ensure that food, hygiene facilities and other special needs are provided for personnel at the scene.

7. *Accident Investigation and Review-*
    a) When notified of an injury, illness or exposure to on scene personnel, the ISO will immediately notify the IC to ensure that appropriate medical care is provided.
    b) Initiates the accident investigation process as defined by Fire Division procedures.
    c) When the ISO is not the HSO, in the event of a serious injury, fatality or other potentially harmful event, the ISO will request the aid of the HSO.

8. *Post-incident Analysis-*
    a) Prepares a written report containing pertinent information concerning incident related safety and health issues for the post-incident analysis, and participates in the post-incident analysis.
    b) The ISO report will include information related to personal protective clothing and equipment use, the personnel accountability system, rapid intervention crews, rehabilitation operations and any other concerns impacting the safety and welfare of personnel operating at the scene.

9. *Other Duties & Responsibilities*
    Performs other duties as assigned and required.

## *F. Checklists:*

The attached checklists are provided to assist the ISO in the above functions and specialized incidents. (See attached)

**End of Policy**

EFFA Review: _____ Date: _____
Billy Young, President EFFA

Approved by: _____ Date: _____
C.H. Olson, Director

# Safety Officer Tactical Sheet and Checklist

## Incident Information

Incident Name:

Incident Date:

Incident Time:

Location:

Incident Nature:

☐ Structure Fire ☐ Wildland Fire ☐ Vehicle Fire
☐ Other_____

Elapsed Time on Scene (in minutes):
**5 10 15 20 25 30 35 40 45 50**

## Weather Conditions

| | | | |
|---|---|---|---|
| Time | | Wind Direction | |
| Temperature | | Wind Speed | |
| Wind Chill | | Precipitation | |
| Humidity | | Sunrise | |
| Heat Index | | Sunset | |

## Incident Potential

☐ Incident Under Control
☐ Incident will require additional resources

## Personnel

___Appropriate PPE in use
___SCBA in use? Adequate supply of bottles?
___Air monitoring for overhaul
___Any personnel/teams freelancing
___All personnel in teams or crews
___Personnel assigned, in staging or rehab
___# personnel on scene
___# units on scene
___Injuries/fatalities
___Critical Incident Stress Management needed?

## The Building

Occupancy type:_____
☐ Occupied ☐ Unoccupied
☐ Collapse signs
___Truss construction
___Gusset plates
___Under construction/renovation
___Older building
___Special hazards
☐ Utilities: Gas_____ Electric _____
☐ Master streams in place? How Long?_____
☐ Burn time _____

## Diagram of Incident

**Wear full protective gear and stay upwind**

## Safety Section

☐ Required ☐ Not Required

SectionChief:_____
Assistant ISOs:
1)
2)
3)
4)
5)

☐ Assistant ISOs briefed and assigned
☐ Safety Section Radio Channel _____
☐ Assistants identifiable (vest, helmet)
☐ All ISOs in appropriate PPE
☐ All ISOs checked in with accountability

## Safety Officer Check-In

☐ Report to the IC

Command post:
☐ Set up
☐ Visible
☐ Safe location

☐ Briefing on the Incident Action Plan – Evaluate based on-
**Risk a lot to save a life*
**Risk a little to save valuable property*
**Risk nothing to save what is lost*

☐ Resources Sufficient for IAP?

Is the strategy clear? ☐ Offensive ☐ Defensive

Safety Officer Identifiable: ☐ Vest ☐ Helmet

☐ 360° Reconnaissance – ***Stop, alter, or suspend any operation posing imminent threat to personnel - report these to IC immediately***
___Conditions
___Hazards
___Risks

☐ Check-in with special team ISO

☐ Check-in with Division, Sector and Group officers

☐ Personnel accountability in place?

☐ RIT briefed, equipped and in place?

☐ Medical unit established for personnel?

☐ Heli-spot safety survey

☐ Rehabilitation Unit Established? ☐ Crew rotation?

☐ Develop Incident Safety Plan

☐ Zones of Control
___Collapse zone
___Safety zones

☐ Entry
☐ Egress
☐ Roof operations

☐ Apparatus placement ☐ Traffic control/hazards

☐ Monitor communications

Fire conditions-
Smoke: Color_____ Volume _____
Velocity _____
___Backdraft potential
___Flashover potential
___Blow-up
___Structural integrity

☐ Review and revise IAP and incident safety plan

☐ Provide safe location for media

# Safety Officer Haz Mat Tactical Sheet and Checklist

## Incident Information

Incident Name:

Incident Date:

Incident Time:

Location:

Incident Nature:
☐Spill ☐Leak ☐Fire ☐Transportation
☐ Other_____
☐ Container type:_____
Elapsed Time on Scene (in minutes):
**15 30 45 60 75 90 105 120 135**

## Product Information

| Information | Hazards | Protective Actions |
|---|---|---|
| Product I.D. _____ _____<br>Quantity Emitted: _____<br>Operating Temp.: _____<br>Operating Pressure: _____ | ☐ Health_____<br>☐Flammability____<br>☐Reactivity_____<br>☐Specific_____ | ☐ Perimeter Control<br>☐ Evacuation<br>☐ Shelter in place<br>☐ Uphill<br>☐ Upwind |

## Weather Conditions

| | | | |
|---|---|---|---|
| Time | | Wind Direction | |
| Temperature | | Wind Speed | |
| Wind Chill | | Precipitation | |
| Humidity | | Sunrise | |
| Heat Index | | Sunset | |

## Incident Potential

☐ Incident Under Control | ☐ Incident will require additional resources

## Personnel

___Appropriate Level PPE in use
___SCBA in use? Adequate supply of bottles?
___Two In – Two Out
___Any personnel/teams freelancing
___All personnel in teams or crews
___Personnel assigned, in staging or rehab
___# personnel on scene
___# units on scene
___Injuries/fatalities
___Critical Incident Stress Management needed?

## Diagram of Incident

**Wear full protective gear and stay upwind**

**CHEMTREC: 1-800-424-9300**

## Safety Section

☐ Required ☐ Not Required

SectionChief:_____

Assistant ISOs:

1)

2)

3)

4)

5)

☐ Assistant ISOs briefed and assigned

☐ Safety Section Radio Channel _____

☐ Assistants identifiable (vest, helmet)

☐ All ISOs in appropriate PPE

☐ All ISOs checked in with accountability

## Safety Officer Check-In

☐ Report to the IC

Command post:
☐ Set up
☐ Visible
☐ Safe location
Uphill
Upwind

☐ Briefing on the Incident Action Plan – Evaluate based on-
**Risk a lot to save a life*
**Risk a little to save valuable property*
**Risk nothing to save what is lost*

☐ Resources Sufficient for IAP?

Is the strategy clear? ☐ Isolate ☐ Identify ☐ Contain

Safety Officer Identifiable: ☐ Vest ☐ Helmet

☐ 360° Reconnaissance – ***Stop, alter, or suspend any operation posing imminent threat to personnel - report these to IC immediately***
___Conditions ___Enforce control zones
___Hazards ___Enforce decontamination
___Risks ___Environment/run-off

☐ Establish and brief Haz Mat Ops ISO

☐ Check-in with Division, Sector and Group officers

☐ Personnel accountability in place?

☐ RIT briefed, equipped and in place?

☐ Medical unit established for personnel?

☐ Heli-spot safety survey

☐ Rehabilitation Unit Established? ☐ Crew rotation?

☐ Develop Incident Safety Plan

☐ Zones of Control
___Hot zone
___Warm zone

☐ Entry
☐ Egress
☐ Decontamination

☐Apparatus placement ☐Traffic control/hazards

☐ Monitor communications

Additional Haz Mat Site Concerns:
___Staging uphill, upwind?
___Downwind exposures?
___Downwind air monitoring?
___Elimination of ignition sources?
___Source controlled?
___Fire Protection required?

☐ Review and revise IAP and incident safety plan

☐ Provide safe location for media

# Safety Officer Technical Rescue Tactical Sheet and Checklist

## Incident Information

Incident Name:

Incident Date:

Incident Time:

Location:

Incident Nature:

☐Confined space ☐Trench ☐ High Angle ☐Water
☐ Other_____

Elapsed Time on Scene (in minutes):
**5 10 15 20 25 30 35 40 45 50**

## Weather Conditions

| | | | |
|---|---|---|---|
| Time | | Wind Direction | |
| Temperature | | Wind Speed | |
| Wind Chill | | Precipitation | |
| Humidity | | Sunrise | |
| Heat Index | | Sunset | |

## Incident Potential

☐ Incident Under Control | ☐ Incident will require additional resources

## Personnel

___Appropriate PPE in use
___SCBA in use? Adequate supply of bottles?
___Hardline in use? Adequate backup supply?
___Air monitoring
___Any personnel/teams freelancing
___All personnel in teams or crews
___Personnel assigned, in staging or rehab
___# personnel on scene
___# units on scene
___Injuries/fatalities
___Critical Incident Stress Management needed?

## Rescue Operation

___Atmospheric Monitoring?
___Space Ventilation?
___Shoring/Cribbing?
___Entry Control Officer established?
___Ropes, rigging and anchors set up properly?
___Number of victims?
___Victim location? ___Known ___Unknown
___Victims contaminated? ___Yes ___ No
___Victims injured?
___Extrication required?

## Diagram of Incident

**Wear full protective gear and stay upwind**

## Safety Section

☐ Required ☐ Not Required

SectionChief:_____

Assistant ISOs:

1) _____
2) _____
3) _____
4) _____
5) _____

☐ Assistant ISOs briefed and assigned
☐ Safety Section Radio Channel _____
☐ Assistants identifiable (vest, helmet)
☐ All ISOs in appropriate PPE
☐ All ISOs checked in with accountability

## Safety Officer Check-In

☐ Report to the IC

Command post:
☐ Set up
☐ Visible
☐ Safe location

☐ Briefing on the Incident Action Plan – Evaluate based on-
**Risk a lot to save a life*
**Risk a little to save valuable property*
**Risk nothing to save what is lost*

☐ Resources Sufficient for IAP?

Is the strategy clear? ☐ Rescue ☐ Recovery

Safety Officer Identifiable: ☐ Vest ☐ Helmet

☐ 360° Reconnaissance – ***Stop, alter, or suspend any operation posing imminent threat to personnel - report these to IC immediately***
___Conditions
___Hazards
___Risks

☐ Check-in with Technical Rescue Team ISO

☐ Check-in with Division, Sector and Group officers

☐ Personnel accountability in place?

☐ RIT briefed, equipped and in place?

☐ Medical unit established for personnel?

☐ Heli-spot safety survey

☐ Rehabilitation Unit Established? ☐ Crew rotation?

☐ Develop Incident Safety Plan

☐ Zones of Control
___Collapse zone
___Safety zones

☐ Entry
☐ Egress
☐ Lock out/Tag out

☐Apparatus placement ☐Traffic control/hazards

☐ Monitor communications

___Entry and Backup teams briefed, in appropriate PPE
___Limit Access, deny entry
___Lock-out/Tag-out of all:
☐Mechanical devices
☐Pneumatic devices
☐Electrical Devices
___Environmental monitoring (atmosphere, oxygen etc.)

☐ Provide safe location for media

☐ Review and revise IAP and incident safety plan